

Tasmanian Year Book



1971

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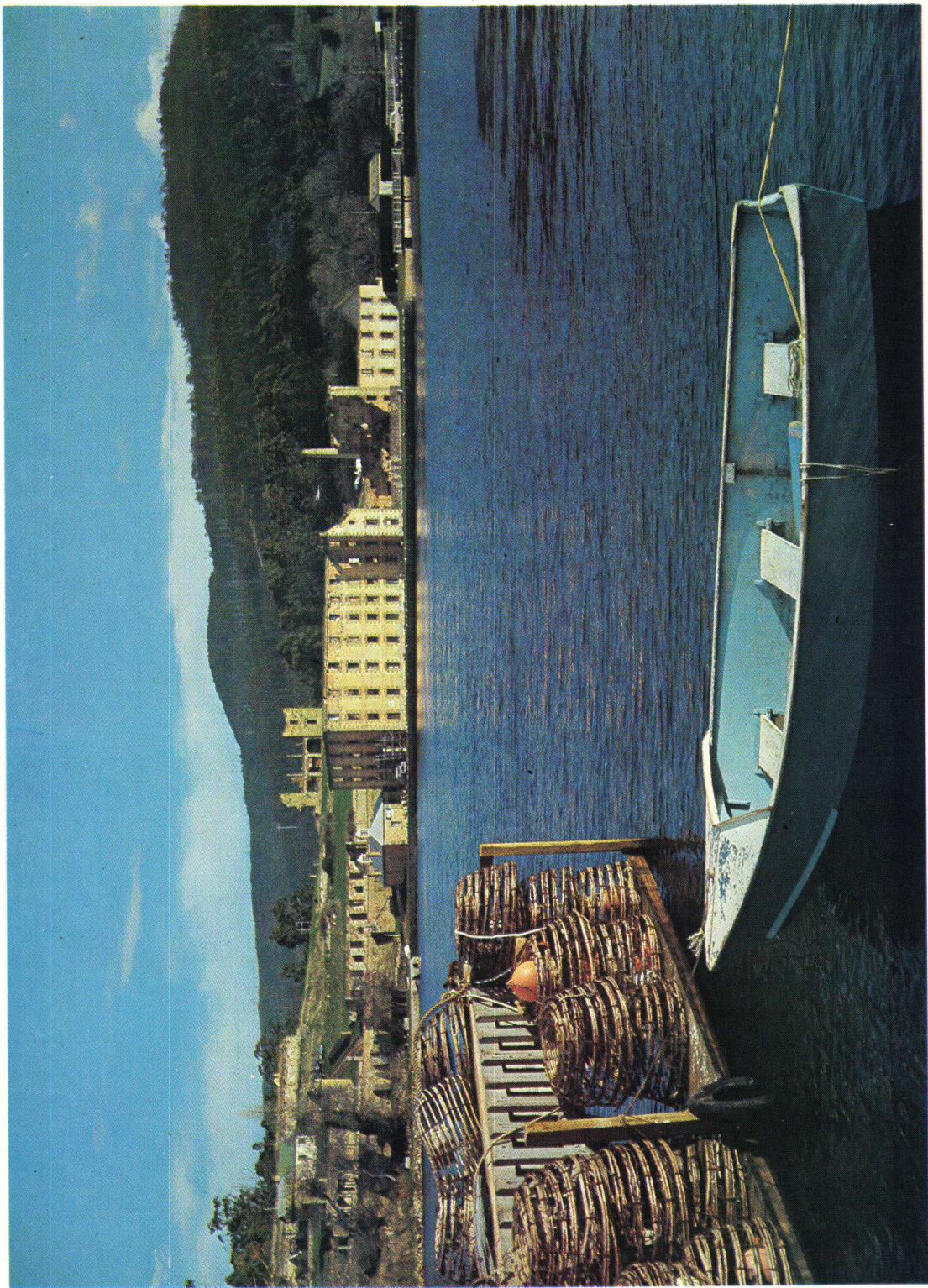
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TASMANIAN YEAR BOOK

No. 5 — 1971



Powder Magazine and penitentiary, Port Arthur

(Don Stephens)

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No. 5 — 1971

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Deputy Commonwealth Statistician

and

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Commonwealth Bureau of Census and Statistics

Tasmanian Office, Hobart

1971

By Authority:
T. J. Hughes, Government Printer, Tasmania.

Registered at the General Post Office, Hobart, for transmission
through the post as a book.

Wholly set up and printed in Australia.

PREFACE

This is the fifth issue of the *Tasmanian Year Book*, the first appearing in 1967.

The Year Book is designed to present a comprehensive statistical and descriptive account of the physical environment and of the social, demographic, economic, etc. structure of the State with particular emphasis on change and development in more recent years.

The first two Year Books featured a great deal of historical material, but in subsequent issues this has been reduced and greater emphasis placed on expanding the contemporary record. Special historical articles dealing with the early administration of Tasmania and on other matters of general interest will, however, continue to appear. In this issue articles have been included on the administration of Sir William Denison (1847-1855), on Sir Francis Smith, the fourth Premier of Tasmania on Maria Island and the Van Diemen's Land Company.

Other special articles included in this issue feature some of the State's major industries, the soils of Tasmania, the State Library of Tasmania and the role of radio and television in education in Tasmania.

An index of all special articles which have so far appeared in the Year Book is included as Appendix D.

As far as possible the latest available statistics at the time of printing and significant developments which have occurred in 1970 have been embodied in each chapter. However, where this has not been practicable, brief details have been included in Appendix C 'Later Information'. Unfortunately it has been necessary to repeat some of the 1967-68 factory statistics as later data have been considerably delayed by major changes in the factory census. A brief explanation of these changes which also affect the mining retail and wholesale censuses is given in Chapter 8.

More detailed statistics relating to matter treated generally in the Year Book are available in the various Bulletins and other publications issued by the Bureau. Information about these publications is provided in Appendix A.

I gratefully acknowledge the valuable assistance given by officers of the various Commonwealth and State Departments and by others who have contributed information, often at considerable trouble, and by those who have provided photographs. Especially I should express my appreciation to the Government Printer and his staff for their enthusiasm and co-operation in printing this volume.

The Year Book has been compiled under the direction of Mr J. M. Holliday, B.COM.; Mr D. G. Rayner, B.A. DIP.ED. was responsible for the editing of this issue.

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Commonwealth Bureau of Census and Statistics,
HOBART, January 1971

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SYMBOLS AND USAGE

The following symbols where used mean:

- n.a. Not available.
- n.e.i. Not elsewhere included.
- n.p. Not available for separate publication; included in totals where applicable.
- p Preliminary—figure or series subject to revision.
- r Figure or series revised since previous issue.
- .. Nil or less than half the final digit shown, or not applicable.
- Break in continuity of the series. (Where drawn across a column between two consecutive figures.)

A blank space indicates the figure is not yet available.

Values are shown in Australian dollars (\$) and/or cents (c).

Any discrepancies between totals and sums of components in tables are due to rounding.

LOCAL NAMES OF CERTAIN REGIONS

Tasmanians describe certain regions in a manner confusing to strangers; nevertheless this book employs local usage in most contexts. The chief peculiarities are:

North-West Coast: The *north* coast from approximately Port Sorell west to Cape Grim is called the *north-west coast*.

North-East Coast: The *north* coast from approximately Low Head east to Cape Portland is called the *north-east coast*. With most of the north coast referred to as either 'north-west' or 'north-east', the term 'north' is rarely applied to this coastal region.

West Coast: The Tasmanian west coast may refer only to the mining settlements of Queenstown, Rosebery, etc. In other contexts, the user may be thinking of inland mountains and rainforests, rather than of a coastline.

Midlands: The true midlands are probably the Central Plateau but the Tasmanian term means the rural area east of the Plateau and lying along the axis of the Hobart-Launceston road.

Chapter 1

HISTORY AND CHRONOLOGY

DISCOVERY

The Period of Dutch Exploration

In the authors of antiquity, references are found to a land called 'Terra Australis' but it is the Dutch who are credited with the discovery of both Australia and Tasmania. The Dutch, with their trading posts in Java, represented the closest extension of European sea power near the north of the unknown continent and its discovery, either by accident or design, became inevitable.

In 1606, Captain William Jansz in the *Duyfken* was sent from Java to explore the islands of New Guinea and, crossing Torres Straits unawares, coasted along the west of Cape York Peninsula; this was the first of a series of voyages by Dutch captains who, in the next thirty years, acquired some knowledge of the western shores of the unknown land. Not all voyages were undertaken with the aim of exploration—Dirk Hartog's long journey along the western shore of Australia in 1616 resulted from his sailing too far east on the route from Cape of Good Hope to Java. Some later captains on the same route even regarded the western Australian coast as a suitable landfall before turning north for Java—a commentary on the difficulty of navigation when longitude had to be established by dead reckoning.

In 1642, the Dutch East India Company despatched from Java an expedition of two vessels, the *Heemskirk* and *Zeeban*, under Captain Abel Tasman, with instructions to investigate the extent of the unknown land thought to exist between New Guinea and the western coast of Australia. One immediate aim of the Governor General, Anthony Van Diemen, was to find a southern route from Java to Chile so that ships of the company could either trade or plunder along the Pacific coast of South America; a question to be resolved was whether any land mass extending far south blocked such a route.

The original plan was to sail west to Mauritius, to run down to 52° or 54° South latitude and then to proceed east; assuming no land was discovered, it was then intended to turn north in either the longitude of eastern New Guinea or possibly of the Solomons. If Tasman had followed this plan in every detail, he might have discovered the east coast of Australia, anticipating Cook's work by more than a century. As it turned out, the extreme southern latitudes were too hostile and accordingly Tasman was sailing east in latitude 42° South when he sighted the mountainous west coast of Tasmania on 24 November 1642.

The Dutch navigator skirted the south coast and made a landing on the east coast for water in Blackman Bay (from an anchorage south of Marion Bay). He then sailed north to St Patricks Head, crossed the Tasman sea and discovered New Zealand, returning to Java by a route to the north of New Guinea. Tasman had thus performed the feat of circumnavigating Australia in a single voyage without once sighting the Australian continent.

In honour of the Governor General of the Indies, he named the first discovery Van Diemen's Land, imagining it to be the most southern extension of the Australian continent, an illusion that was only completely dispelled by Bass and Flinders when they circumnavigated the island in 1798. The Dutch did not follow up the discoveries of Tasman or their other explorers because they were interested in establishing trading posts only among peoples with a higher degree of civilisation than the natives of Tasmania or Australia appeared to possess. (Tasman's crew saw no natives in Tasmania but inferred their existence from sounds, cuts in trees and the smoke of fires.)

The Period of British and French Exploration

One hundred and thirty years passed before Tasmania was visited again, this time by the French navigator Marion du Fresne in 1772; he virtually repeated Tasman's original landfall, skirted the south coast and came to anchor in the bay that bears his name (Marion). His visit is memorable for the first contact between Europeans and Tasmanians and for the slaying of the first native by gunfire. Du Fresne himself was killed by Maoris in New Zealand on the same voyage.

A year later, Captain Tobias Furneaux in the *Adventure* became separated from Captain Cook in the *Resolution* on the route to New Zealand, and made for Tasmania to obtain water. He eventually anchored off Bruny Island in Adventure Bay but mistakenly believed himself to be in the area of Tasman's original landing which was at least forty-five miles to the north-east. From this original error sprang a confusion in nomenclature which persists to this day (e.g. Frederick Henry Bay, first named in Tasman's record, appears on maps in an area that Tasman did not even see). Furneaux then sought to investigate the possibility of a strait separating Tasmania from the continent recently explored by Cook, but shoals in the islands bearing his name (Furneaux Group) caused him to desist and make for New Zealand.

In 1777, Cook, on his third voyage, used the Adventure Bay anchorage without detecting Furneaux's navigational errors.

The settlement at Port Jackson in N.S.W. in 1788 put Tasmania on a major sailing route, the first fleet passing south of the island on its way. To have sailed north of the island would have invited shipwreck on the Australian 'mainland' of which Tasmania was then believed to be part. In the same year, Captain William Bligh put into Adventure Bay with the *Bounty* on his way to Tahiti and to the famous mutiny; he had been on Bruny Island before, as Cook's sailing master.

Captain Cox of the *Mercury* anchored in the bay known as Cox Bight in 1789, charted some of the south coast and explored the strait between Maria Island and the east coast.

The next visitor (1792) was Admiral Bruny D'Entrecasteaux commanding *Recherche* and *Esperance* and searching for La Perouse who had not been heard of since 1788 when he sailed from Botany Bay. The Admiral sailed north hoping to anchor in Adventure Bay, but a navigational error put his ships too far west with the happy result that he discovered the magnificent channel separating Bruny Island from the Tasmanian mainland, and was the first to sail up the Derwent River. Leaving Tasmania, the expedition sailed as far west as Cape Leeuwin in western Australia when it became imperative to take on water. It is an indication of the lack of knowledge then available that D'Entrecasteaux had to return to Adventure Bay to fill his casks. In the same year, Bligh put into Adventure Bay on his way to obtain breadfruit trees in the Pacific for transplanting in the West Indies.

The year 1794 was notable for the visit of Commodore John Hayes who had sailed from India with the *Duke of Clarence* and the *Duchess*; he explored the Derwent as far as Mt Direction and named Risdon Cove later to be the site of the first settlement.

Tasmania an Island

Two voyages now followed which established that Tasmania was an island. Surgeon George Bass in a whaleboat left Port Jackson in 1797, rounded Wilsons Promontory and discovered Western Port. The nature of tides and swells encountered told Bass that here was no bay but rather a strait of considerable magnitude. Lieutenant Flinders held a contrary opinion, however, thinking that a land-bridge was necessary to explain the presence of natives in Tasmania. In 1798, Bass and Flinders were given the sloop *Norfolk* to decide the question for all time and they circumnavigated the island, commencing on a westerly course along the north coast where they discovered the Tamar estuary.

Fear of the French

In the original annexation of Australian territory by Cook in 1770, Tasmania was excluded since the southern limit was proclaimed as 38° South latitude. Formal possession of Tasmania had been taken by Governor Phillip on 26 January 1788, when he read his commission to the people of the First Fleet at Sydney Cove. Now that it was established that Tasmania was an island, the authorities both in London and Sydney felt that some steps should be taken to block the French from making any claims to possession. The urgency of doing this was underlined by the arrival in D'Entrecasteaux channel of Admiral Baudin with the *Geographe* and *Naturaliste* in 1802. The expedition's navigator, Freycinet, charted Tasman and Forestier peninsulas and correctly identified the Frederick Henry Bay of the Dutch era. The expedition then called at Port Jackson before sailing south into Bass Strait where it was intercepted at King Island by Lieutenant Robbins in the *Cumberland*. Announcing his intention boldly to the French Admiral, the Lieutenant then disembarked his small company and formally annexed the island in the name of King George III. Governor King at Port Jackson who gave Robbins his instructions was not satisfied that merely formal acts of annexation would block the French indefinitely and decided that permanent settlements were required if British sovereignty were to be retained. To this decision can be attributed the settlement at Risdon (1803) and the Hobart and Port Dalrymple settlements of 1804.

Geography of the Original Landing

The State map published by the Tasmanian Lands and Surveys Department (1:250,000) makes easy the recognition of Tasman's landings on the east coast. His anchorage was near Visscher Island while the first landing was made by longboats which passed through the narrows into Blackman Bay. The second landing occurred in the south-east of North Bay where a lagoon proved to be too brackish for filling water casks.

The last landing was made near Tasman Bay where the navigator had hoped to plant the flag of his Prince and take formal possession of the new land. The surf being too rough to get the longboat ashore, the carpenter swam through the waves, planted the flag and then fought his way back to the longboat.

SETTLEMENT

The First Settlement at Risdon (1803)

It will be observed that the original explorers of the island (including the French) had very largely concentrated their attention on the south-east and, in particular, on the sea approaches to the Derwent. Faced with the necessity for establishing a settlement to assert British sovereignty, Governor King had a number of possible sites to consider, including King Island, Port Phillip and Port Dalrymple (the Tamar Estuary). His eventual choice was the area of the Derwent and he reported his intention to the Admiralty as follows:

'My reasons for making this settlement are the necessity there appears of preventing the French gaining a footing on the east side of these islands; to divide the convicts; to secure another place for obtaining timber with any other natural productions that may be discovered and found useful; the advantages that may be expected by raising grain; and to promote the seal fishery.'

Commissioned to make the Derwent settlement, Lieutenant John Bowen sailed from Sydney with the *Albion* and *Lady Nelson*; the two vessels became separated in a gale but both were at anchor at Risdon by 11 September 1803 when Bowen went ashore. The slenderness of Governor King's resources is apparent from the fact that the settlers—free, convict and military numbered only 49 and that the *Albion* was a British whaler under temporary charter (she caught three sperm whales on the voyage while becalmed).

The responsibility for the choice of the Risdon site attaches ultimately to Bass who had made detailed investigations of the Derwent in 1798 from the *Norfolk*. He had reported as follows: 'The land at the head of Risdon Creek, on the east side, seems preferable to any other on the banks of the Derwent'. It was not surprising, therefore, that Bowen's commission from Governor King directed him to locate the new settlement in the Risdon area. In actual fact, the site ultimately proved unsuitable due to the inadequate stream and the poor landing place; these handicaps were aggravated by the wretchedness of the human material at Bowen's disposal, a characteristic not altered when the camp was increased to nearly 100 persons.

If the settlement has any claim to fame, it derives from an encounter with natives who descended on the camp on a hunting expedition and who were fired on by the soldiers in a state of panic. Whether the future barbarities of inter-racial war could have been avoided is an open question but this encounter was the first phase of a struggle that ended in the extinction of a race.

The final act of the Risdon settlement was played on 9 August 1804, when the *Ocean* sailed for Port Jackson with Lieutenant Bowen and most of his people; Lieutenant-Governor Collins at the new settlement at Hobart had decided to close down the Risdon camp and held such a low opinion of these early colonists that he retained only thirteen convicts and one free settler.

The Settlement at Hobart (1804)

If Lieutenant-Governor Collins had carried out his original instructions, then Hobart today might have been the name of the capital of Victoria situated on Port Phillip Bay. The British Cabinet, impressed by Governor King's warnings on possible French penetration, decided to carry out the occupation of Port Phillip direct from Britain and, to this end, commissioned Lieutenant-Colonel Collins (Royal Marines) to command an expedition in the *Calcutta* with the *Ocean* as tender to secure the strategic Bass Strait. Control

of the Strait meant that the dangerous seven hundred mile journey around Van Diemen's Land was avoided and also prevented a hostile foreign power from threatening British sea lanes in the South Pacific. The settlers eventually arrived, via Rio De Janeiro and the Cape of Good Hope, and formed a temporary camp near the site of the modern Sorrento township. For a variety of reasons, Collins was unhappy about the locality; he considered navigation hazardous, the soil poor and water inadequate. He was unwilling to develop promising land at the head of the bay due to the show of strength by large bands of natives and because of its distance from the open sea. Collins had seen the problems of isolation at Sydney and considered a settlement at the head of Port Phillip Bay unduly hazardous. With the wind in the wrong quarter a ship could be locked in the bay for several days thereby defeating the purpose of the settlement—a port to protect and control Bass Strait. Accordingly he wrote for advice to Governor King in Sydney and was left free to decide between the River Derwent and Port Dalrymple as possible sites for transfer of his command. He was probably swayed in his eventual choice of the River Derwent by its reputation as a safe harbour and the fact that Risdon had already been settled.

On 15 February 1804, Collins, with the first detachment from Port Phillip in the *Lady Nelson* and *Ocean*, anchored off the new settlement at Risdon. A quick inspection satisfied Collins that the site was quite unsuitable and he made his own reconnaissance, eventually selecting the area on the western bank known as Sullivan's Cove and ordering that the expedition should be disembarked with all its stores in the vicinity of Hunters' Island. In the same month, Collins reported to King that his two ships were 'lying within half a cable-length of the shore in nine fathoms of water'; the Lieutenant-Governor had selected gentle slopes for his settlement, located a fine stream running from Mt Wellington and found near the mouth of the stream depths of water which would accept the draught of any vessel of his day (or of the modern era).

The following table shows the early composition of the settlement at Sullivan's Cove (but excludes details of the Risdon camp):

Number Victualled at Sullivan's Cove, 26 February 1804

Quality	Men	Women	Children
Military Establishment	26	1	..
Civil Establishment	6	..	..
Settlers	13	5	13
Convicts	178	9	8
Supernumeraries	(a) 3	..	..
Total	226	15	21

(a) Including one aboriginal from Port Jackson.

The strength of the colony was increased to 433 persons in June 1804 when the *Ocean* returned from Port Phillip, where it had taken aboard the balance of the original expedition. From the camp on Sullivan's Cove has sprung the present city and port of Hobart.

David Collins was no amateur in the field of colonisation—he had sailed with Governor Phillip as Judge Advocate in the first fleet in 1788 and had acted as Secretary to the Governor till 1796 when he returned to Britain with

excellent recommendations. His memory is honoured in Hobart's Collins St, in the Anglican Cathedral (St David's) and by the memorial above his grave in St David's Park.

The Settlement on the Tamar (1804)

While the Lieutenant-Governor was still in Port Phillip Bay, wondering where best to settle, he sent his namesake, William Collins, on a voyage of exploration to the Tamar estuary. William Collins followed the river up as far as the Cataract Gorge and returned to Port Phillip with a good account of the possibilities of the Tamar for settlement; in his absence, however, the Lieutenant-Governor had made up his mind and was already preparing for the expedition to the Derwent.

Later Governor King received a despatch from Lord Hobart (Secretary of State for the Colonies) who, by a grotesque error, recommended the establishment of a settlement at Port Dalrymple 'upon the southern coast of Van Diemen's Land and near the eastern entrance of Bass' Straits' (sic). If Lord Hobart really meant 'south' then Collins' move to the Derwent had anticipated his wishes. However, since Collins had in fact left Port Phillip, was it not necessary to re-occupy Port Phillip or possibly to watch the Strait from Port Dalrymple? King knew that Hobart's despatch was written in ignorance of Collins' move and accordingly decided to use his own initiative without raising questions of geography with the Secretary for Colonies.

In Hobart's despatch, Lieutenant-Colonel William Paterson (New South Wales Corps) was nominated as Lieutenant-Governor of the new colony. Paterson set sail with 57 soldiers and convicts in the *Integrity* and the *Contest* but after a month of adverse winds both ships were forced back to Port Jackson. A second attempt was made using *Buffalo*, *Lady Nelson*, *Francis* and *Integrity* and increasing the party to 181. This time the Tamar was successfully entered but *H.M.S. Buffalo* went aground and was, with some difficulty, brought to anchor in Outer Cove (George Town) on 4 November 1804. Lieutenant-Colonel Paterson decided that *Buffalo* must be immediately unloaded and accepted the Outer Cove site as a suitable camp while he undertook a more detailed reconnaissance of the Tamar.

Although he penetrated as far as the fertile site of Launceston, Paterson made the extraordinary decision to set up his headquarters at the head of West Arm and founded York Town, while still maintaining small establishments at Outer Cove, Low Head and Green Island. In deciding on York Town, one can only imagine that Paterson was guided purely by the strategic necessity, as was Collins at Sorrento, of being near to Bass Strait and that he gave little thought to the problem of soil fertility and cultivation.

In March 1806, Paterson was willing to admit that York Town was a most unsuitable site and he accordingly moved his headquarters to the present site of Launceston. Today York Town and Risdon have one thing in common—the almost complete absence of any indication that settlements had ever existed. The Lieutenant-Governor's name is commemorated today in Launceston's Paterson Street and Paterson Barracks.

Paterson, before setting out on his expedition, had been involved in an argument as to his status but Governor King had resolved the matter by dividing Tasmania at the 42° parallel and making Collins and Paterson sovereign in their respective halves, but subordinate to him as Governor. In naming the Tamar and Launceston, Paterson was honouring King who came from Launceston in Cornwall.

THE VAN DIEMEN'S LAND COMPANY

(The following article was contributed by Dr H. J. W. Stokes, Tutor in History, University of Tasmania.)

Formation of the Company

The Van Diemen's Land Company was probably the most unfortunate of all capitalist ventures in early Australia. Formed in London in May 1824 by a group of wool merchants, the Company sought in Van Diemen's Land (as the Australian Agricultural Company had done in New South Wales) a large grant of crown land for the grazing of Merino sheep. The British government at first had misgivings about allowing the Company so vast an area as the 500,000 acres which it requested, fearing that the interests of smaller settlers would be prejudiced, for it was known that most of the good land in the eastern half of the island had already been settled. But sufficient self-styled 'authorities' on the colony were found to convince both the company and the government that there was ample land suitable in its natural state for grazing in the unexplored north-western quarter of the island, and in February 1825 the Colonial Secretary, Earl Bathurst, gave the Company authority to select 250,000 acres of 'useful' land in that part of Van Diemen's Land.

Edward Curr

To lead the venture the Company appointed Edward Curr as Colonial Chief Agent. Curr had only limited experience of farming in Australia, but he was an energetic, determined man who stood out among the many incompetents and malcontents that it seemed the Company's lot to employ; his principal faults, and those which led eventually to his downfall, were quickness to take offence and an implacable hatred of those he believed had thwarted him.

Curr arrived at Hobart Town in March 1826, accompanied by his chief officers, notably Stephen Adey (superintendent of farms), Alexander Goldie (agricultural superintendent) and Henry Hellyer (chief surveyor). They travelled overland to the North-West and on 22 April 1826 crossed the Quamby River to enter the area in which the grant was to be located. But they were surprised to find that the district was far from being 'several days' journey from the inhabited districts', as Curr had assured Bathurst the grant would be. Private settlers were already established on the Quamby River and at Port Sorell. Curr hurried back to Hobart Town to consult the colonial authorities.

Dispute over Grant

There followed the first of many disputes between the V.D.L. Company and the government over the location of the grant, all of them springing from Bathurst's failure to clearly define the area in which the grant was to be selected. Curr believed that the Company was free to choose land anywhere between Port Sorell and Cape Grim, but Governor Arthur claimed that Bathurst had intended the grant to be located in the far north-western corner of the island. When the dispute was referred to London, it transpired that both Curr and Arthur were partially correct; Bathurst confirmed that he had intended the Company to be free to select land anywhere between Port Sorell and Cape Grim, but he had done so only because he believed even Port Sorell to be remote from other settlements. He postponed a final decision on the dispute until more was known about the whole area.

Exploration

Meanwhile exploration continued. In the autumn of 1826 Adey and Goldie sailed along the coast westward from the Tamar River almost to Cape Grim; they reported that 'bad' (connoting densely forested) country extended the whole way from the Mersey to Circular Head, but at the latter place there were tracts of up to 500 acres of open grassland and, even more important, the best harbour on the coast. Curr therefore decided to make the Company's first settlement at Circular Head and on 24 October 1826 the brig *Tranmere* arrived with employees, livestock and tools to begin the establishment of a township, farm and jetty.

Circular Head became the base for further exploration in the North-West. Goldie and his assistant surveyor Fossey had already found an estimated 50,000 to 60,000 acres of grassland in the Cape Grim area and in February 1827 Henry Hellyer made a long journey south-eastward to the mountain which he named St Valentine's Peak and found a large area of open, grassy uplands. From Hellyer's description of his discoveries, which he named the Hampshire and Surrey Hills, Curr concluded that they were equal to the finest sheep country in the island and decided to make an immediate start on their settlement. During the winter of 1827 a rough cart track was cut southwards through the forest from Emu Bay to the Surrey Hills and thence eastwards to the settlements in Deloraine area and in the following summer, stocking of the Hills with sheep began. Farms were established at Hampshire, Burghley (on the Medway River) and Chilton (on the Fossey River), with a number of shepherds' outstations; this dispersal of settlement was necessitated by the fact that the natural grasslands were widely scattered among areas of forest.

A detailed account of the exploits of the Tasmanian explorers in this area was published in the 1970 edition of the *Year Book*.

Hampshire Hills Failure

Curr paid his first visit to the Hills early in October 1827 and had immediate misgivings about Hellyer's optimistic reports. He found that the soil was of indifferent quality, with rocky outcrops and that the district's only obvious asset was an abundance of water: none of the criteria of good pastoral land in the eastern half of the island (kangaroo grass, peppermint gums, kangaroos and cockatoos) were present. After his next visit, however, he wrote more hopefully to the directors about both grass and soil and the company proceeded to invest a large sum in stock, buildings and fences for the settlements on the Hills.

At first the venture seemed likely to be justified. Stock losses from cold and marauding Tasmanian Tigers were fairly heavy, but Curr was cheered by the marked improvement in the quality of the grass after it had been burnt and in March 1831 reported that he was more pleased with the Hills each time he saw them. But his optimism was short lived. The wet summer of 1831-32 which left the sheep in poor condition was followed by the worst winter yet experienced in the district, during which over 1,000 sheep died of cold and nearly 300 more were killed by Tasmanian Tigers and native dogs. The summer of 1832-33 was even colder than the last, and the stock losses continued. Curr would have disposed of all the sheep at the Hills had Van Diemen's Land not been so overstocked that they were unsaleable and he was forced to leave them to their fate. There were further heavy losses from cold and wild animals during the winter of 1833, reaching catastrophic proportions the following spring when 300 lambs were lost in one night of snow. The few remaining sheep seemed unlikely to live much longer and all were removed to Circular

Head during 1834. Of the 5,500 sheep sent to the Hills and all their progeny only a few hundred survived. The Surrey and Hampshire Hills, once the centre of the Company's hopes, became for a century a forgotten land occupied only by the wandering descendants of Kyloe cattle introduced experimentally from the Scottish Highlands. Shortly before the Second World War, however, Associated Pulp and Paper Mills of Burnie purchased the Hills and began a new stage in their development with logging and afforestation on a large scale.

The failure of sheep-grazing on the Hills left the Company in a parlous state. By agreements with the government eventually completed in 1833 it had taken 220,000 acres of its 350,000 acre grant (this area provided for an allowance of 100,000 acres of 'useless' land unavoidably included with good when rectangular blocks were surveyed) in a vast swathe extending south from the coast at Emu Bay to the Surrey Hills with an isolated 10,000 acre outlier taking in the Middlesex Plains on an upper tributary of the Forth River. The remainder of the grant consisted of 20,000 acres at Circular Head, 100,000 acres at Cape Grim and 10,000 acres on the off-shore islands between those places. Of these other parts of the Company's estate most of the Circular Head block was (like the land at Emu Bay) of excellent soil, but covered by a dense forest too costly to clear for grazing, while Cape Grim (where a farm named Woolnorth had been established in September 1829) and the islands consisted of a mixture of poor rough grassland, scrub and forest; 800 acres of marshland at Woolnorth were cleared, drained and grassed in the early 1830s but this was too expensive a measure to be applied on a large scale.

Attempt to Obtain New Land

Curr had realised by 1833 that failure at the Hills was inevitable and in April of that year sailed for England to discuss the future of the Company with the directors. It was decided to persevere with what forms of activity seemed most likely to be successful on the various blocks (mixed farming and stud horses at Circular Head, sheep at Woolnorth and on the islands and cattle at the Hills), but at the same time renewed efforts were made to obtain a grant of more land more suited to sheep grazing either in the north-eastern part of Van Diemen's Land or at Port Phillip, Curr favouring the latter place. Many applications for an exchange of land were made to the Colonial Office between 1834 and 1839, but to no avail, and the Company eventually resigned itself to making what it could of the existing grant.

Curr saw in this failure to obtain new land the determination of Governor Arthur to oppress the Company, but this is open to question. The Company had received almost all the land most likely to be fit for grazing in its natural state in the North-West, and this with many concessions from the government, the most notable being that of permission to take the grant in several separate blocks. The Company had obtained permission to take a grant after assuring the government that there was suitable land in the north-western part of the island, although they were in fact almost completely ignorant of the area. Thus their failure was due essentially to their own folly and there was no justification for further government assistance, particularly in view of the radical change in colonial land policy since 1825; the 1831 regulations had ended the granting system, replacing it with sale by auction at a minimum price of 5/- per acre and there was no reason why the Company should be treated more favourably than private settlers, especially as the demand for grazing land on the island had by then far outstripped the supply. The only possible course open to the Company would have been to buy land at Port Phillip, but this was apparently never even considered.

After his return from England in November 1834 Curr managed the Company's affairs on the assumption that he would have to do the best he could with the existing grant. To supplement the limited income from wool sales he began to exploit more fully the growing market for all kinds of live-stock in Australia, a development hitherto checked by the directors who, not realising the limitations of their estate, had wanted the largest possible increase of their animals. There was a keen demand for the new blood and high quality of the Company's stock both in Van Diemen's Land and the new colony at Port Phillip, and the late 1830's at last brought modest prosperity; no calls on shareholders were necessary between 1835 and 1839 and small dividends of 5/- per share were paid in 1837 and 1838.

Downfall and Dismissal of Curr

Ironically this first, brief period of success saw the downfall of the man who had done most to achieve it. Edward Curr had many virtues, but he was quick to sense an insult and, particularly in his later years, tended to see in the actions of anyone with whom he disagreed a desire to persecute him, a belief which in the case of the colonial government became almost a mania. Curr believed that the government was doing all in its power to thwart the Company and adopted a belligerent attitude in his dealings with the authorities that strained relations almost to breaking point and caused the directors (who were still hoping for an exchange of lands) much concern. In 1839 Governor Franklin refused to have any further correspondence with Curr, and the latter was severely reprimanded by the directors. But the following year Curr refused, as a matter of principle, to give way to the government over a long dispute about the payment of the magistrate at Circular Head, even when ordered to do so by the directors, and in September 1840 he was given one year's notice of the termination of his appointment.

James Gibson and Mixed Farming

With the dismissal of Curr the first phase of the Company's history came to an end. The depression of the 1840s crippled livestock sales and, although farming operations continued on a modest scale, Curr's successor, James Gibson, devoted most of his time to an entirely new scheme. This was the establishment of small tenant farmers on the rich but densely forested land near the coast at Emu Bay and Circular Head. In 1842 the Company advertised blocks of land on seven-year leases at 2/- per acre per annum, the first three years' rent to be spent on improving the land and the remainder to be paid to the Company in cash or produce; at the end of seven years the tenant could either purchase his farm at £2 per acre or give it up and be paid £4 for every acre cultivated. To make these terms more attractive, Gibson, without the knowledge of his directors held out an additional inducement in the form of a promise to buy all the tenant's produce at fixed prices. The result was quite a rush of settlers to Emu Bay and Circular Head and by the middle of 1843, 68 pioneers had taken up 8,147 acres of land; thereafter the depression and the director's termination of the fixed price offer (this did not affect those who had already settled) checked the influx.

The fixed price agreement helped to ensure the eventual success of the settlers, after years of epic struggle with forest that cost as much as £25 per acre to clear, but it laid a heavy burden on the Company. The potatoes which the pioneers grew with such embarrassing success were often almost worthless on the terribly depressed open market and calls of £1 per share had to be made almost every year on the luckless shareholders; by the time the agreement finally expired in September 1850, the Company had paid over £65,000 for

produce which it had been able to sell for only £31,000. Characteristic of the Company's ill fortune was the fact that the agreement ended only the year before the Victorian gold rushes sent crop prices soaring.

Abandonment of Farming Operations

By 1851 the directors and shareholders had had enough. During the past quarter of a century they had spent well over £300,000 and got in return about £50,000 in cash and several small farming establishments, of which all except the home farms at Circular Head and Emu Bay had been reduced to near collapse either by harsh climate or by the financial depression of the 1840s. The only part of the Company's operations which offered any substantial hope for the future was the sale or lease of sections of the Circular Head and Emu Bay forest lands and even here progress was unlikely to be rapid. A special general meeting of shareholders in London on 26 February 1851 decided to abandon the Company's farming operations; henceforth the venture which had been intended to rival the Australian Agricultural Company would be reduced to being the absentee landlord of two small farming settlements.

During the next three years the land farmed by the Company was gradually let, the cleared arable land at Emu Bay and Circular Head being divided among a number of tenants, and the vast expanses of the Woolnorth and Surrey Hills taken over for grazing by Dr James Grant and the Field family of Westbury respectively. After rounding-up of the cattle at the Hills had been completed in May 1853 the remaining employees were dismissed, leaving Gibson and the Launceston agent, Ronald Campbell Gunn, to manage the Company's affairs. The rival attraction of the Victorian gold fields discouraged new settlers, but most of those already established retained their farms, making seasonal trips to the diggings, but returning to plant and harvest their crops. The 1850's were on the whole good years for the farmer and this prosperity was reflected in a gradual increase in the Company's income, as the settlers bought new land and expiring leases were replaced by new and more costly ones; by 1860 the Company's annual receipts were approaching £3,000.

Second Half of Nineteenth Century

The Company had by now passed the lowest ebb of its fortunes and during the second half of the nineteenth century its financial position gradually improved. Farming operations were resumed at the coastal settlements and land sales increased with the rapid development of the North-West, particularly from the 1880s onward, and these combined with the construction of the Emu Bay and Mt Bischoff tramway (later railway) to tap the world's richest tin mine (which unfortunately lay just outside the western boundary of the Surrey Hills) kept the Company modestly profitable. But nothing ever occurred to justify the vast sum invested in the Van Diemen's Land Company by its founders.

THE ADMINISTRATION OF SIR WILLIAM THOMAS DENISON

Background

On his arrival in the colony on 26 January 1847 Sir William Thomas Denison was confronted with two major problems—the opposition to transportation and the demand for colonial self-government.

Opposition by the majority of settlers to the policy of continuing and maintaining the transportation system had plagued Governors since the first settlement and had become critical during the administration of Sir John Eardley-Wilmot leading to that Governor's ultimate recall.

During the governorship of Eardley-Wilmot the 'probation system' for the detention and rehabilitation of convicts was operational in Van Diemen's Land.

The probation system required that the newly arrived convicts be herded together in large gangs for the first part of their sentence. The aims of this system were: (i) to preserve the community from the corrupting influence of convicts; and (ii) to isolate the criminals so that they would not be corrupted by the community, which was composed of a high proportion of ex-convicts.

The failure of the system resulted from the high financial cost of maintaining the gangs and from the lack of supervision (only seven warders were allocated for every 300 convicts) which led to a high incidence of crime in the probation gangs. With the system failing Eardley-Wilmot fell from favour and was replaced by Sir William Denison.

The situation leading up to Sir John Eardley-Wilmot's recall is dealt with in detail in the 1970 *Year Book*.

As a result of the failure of the probation system, opposition to the continuation of transportation was strong, which placed Denison immediately on the defensive. Coupled with the demand for the abolition of transportation was the demand for self-government. Both are intimately related but for the purposes of this article are isolated into two streams of action.

1. Anti-Transportation Movement

One of Denison's first acts was an attempt to gauge the climate of opinion towards transportation within the colony. The reaction to this attempt was immediate and, at times, violent. His actions united the colony and produced one of the first 'political issues' where Westminster policy collided head-on with colonial opinion.

Feeling against transportation had grown during the two previous decades. By the mid-1840s open agitation for the cessation of transportation took place in all eastern colonies; nor was this feeling restricted to the Australian colonies—the Cape Colony, Mauritius, New Zealand and Canada all expressed opposition to transportation during this period.

A circular was distributed to all magistrates and to selected 'leading' settlers asking their opinions on transportation. It is interesting to note that no attempt was made to canvass *popular feeling*, probably due to Denison's ingrained fear of democracy.

The circular required answers to the following questions:

'1. Do you consider it desirable that the transportation of convicts should cease altogether?

2. If you consider it desirable that convicts should still continue to be transported to this colony, but in reduced numbers, what number should you consider would be adequate to the wants of the country, in order to keep up a proper supply of labour?

3. You are requested to state what alterations in the regulations respecting the hiring of pass-holders are desirable, with a view of rendering the labour of the convict of more benefit to his employer, keeping in view at the same time, the necessity of encouraging habits of industry, steadiness and regularity of conduct in the convicts.'

The questionnaire gave rise to considerable controversy throughout the colony. Newspapers devoted much editorial space to the circular and speculated on its probable outcome. Public meetings were held in towns and country districts, petitions and counter petitions were prepared and presented to the Governor. Fenton says of the transportation circular debate: 'Never in the (history of the) colony was public opinion so expressive, so dogmatic and yet so diversified. All shades of politicians, all classes of freemen claimed an interest in the momentous enquiry.'

Meetings at Hobart Town and Launceston

A public meeting was held in the colonial capital; attempts were made by the advocates of transportation to disrupt the meeting, but were unsuccessful. Support for anti-transportation speakers was particularly vocal and the cheers could be heard some distance from the hall. The supporters of transportation prepared and presented to the Governor a petition signed by 308 persons claiming 'that they were not heard at the meeting'.

In the north of the colony the anti-transportation movement was particularly strong. A group of six magistrates called a public meeting to explain the situation to the populace. The meeting was divided in attitude towards transportation and a compromise resolution was adopted calling for the formation of a committee 'to collect evidence, to make a report and draft a reply to the circular of the Governor.' (John West, *History of Tasmania*). The committee reported to a public meeting held at the Cornwall Assembly-room on 10 May. Under the Chairmanship of Mr James Cox, resolutions were passed almost unanimously in favour of the abolition of transportation.

Newspapers, Pamphlets and Petitions

The newspapers of the colony, particularly the *Launceston Examiner*, actively supported the case for the cessation of transportation. Several pamphlets were distributed calling for abolition and seeking public support. One pamphlet entitled *Common Sense* appealed to the colonists' patriotic sense and finer instincts:

'Parents of Van Diemen's Land can you hesitate? Let the timid and sordid doubt,—let them reckon the farthing they may lose! Let your hearts dictate your answer to the circular. Let it be worthy of Britons, Christians and Parents. Show that you prize your rights and that you love your children. That land which they tell you will become a desert when the clank of chains, the cries of torture, the noise of riot, and the groans of despair shall be heard no longer will *NOT* become a desert; 'it will blossom abundantly, and rejoice with joy and singing', when your sons and daughters shall go forth, the free among the free. Consult your own understandings that you may obey the dictates of your heart. The Sovereign has invited you to express your desire. Let it not be one that will cause the eyes of mankind to look upon you with abhorrence, and turn away with contempt. Make not your name a scorn and a hissing!

Perform your duty, *AND SAVE YOUR ADOPTED COUNTRY!*

Petitions asking for the abolition of transportation came from many groups within the colony; all Church of England clergy with the exception of three signed such a petition; others were forwarded to the Governor from the *Colonists of Van Diemen's Land*, the *Parents and Guardians of Van Diemen's Land*, and by various groups of mechanics, tradesmen and citizens from both Hobart Town and Launceston.

Minority Opinion

In moral terms only one solution existed—Abolition; but the opponents of abolition claimed that the economy of the colony was dependent upon a continuing supply of cheap labour.

It was true that colonial communications and the construction of public buildings had been made possible only by the use of cheap convict manpower. Roads had been pushed into the hostile interior in a manner impossible but for the use of coerced labour. The Hobart Town-Launceston road with its bridges at Blacksnake Creek (Bridgewater) and Ross joined the two major settlements; other roads opened up tracts of country in the Huon, Deloraine and Swansea districts.

It was also claimed that the convict system, and the fear of retribution it carried, kept bushranging in check. On a pecuniary level, a Mr Carter, storekeeper by occupation, defended transportation as necessary to trade.

Although a minority of the settlers supported transportation, it was only transportation for assignment. The probation system (following the dismissal of Sir John Eardley-Wilmot and the resultant disclosures of the ills and failings of the system—see the 1970 *Year Book*) was abhorrent to almost all colonists.

Growth of Anti-Transportation League

The replies to the circular were so varied that Denison was forced to place his own interpretation on the survey and decided to support the continuation of transportation. He believed the 'economic theorists' who claimed that the economy would be disrupted, the labour market unbalanced and that public works would cease due to the labour shortage. As a result of this action the colonists became hostile to Denison and began to regard him as an enemy of democracy. Anti-transportation feeling hardened in the colony and the newly formed 'The London Agency Association' appointed Mr John Alexander Jackson as its London lobbyist, whose prime function was to agitate for the complete cessation of transportation. This organisation was the forerunner of the successful Australasian League, which ultimately brought about the end of transportation.

End of Transportation 1847 and its Reintroduction 1848

On 5 February 1847 Earl Grey terminated transportation to the colony. A new British penal system was to be introduced requiring the prisoner to serve 18 months in solitary confinement; a further period working on public works; and, at the completion of the sentence, to be transported (with a conditional pardon) to an overseas colony. It was hoped that the new system would widely disperse convicts throughout the Empire. To the dismay of the colonists a dispatch of September 1847 directed the Governor to receive convicts from New South Wales and from the hated Norfolk Island prison—the dregs from an inhumane prison created by an inhumane system. Despite public protest the prisoners arrived and were distributed throughout the colony.

Earl Grey reversed his earlier decision to abandon transportation and on 3 September 1847 reintroduced a quota system: one convict for every free settler shipped to the colony. The finances of the British Treasury prevented this scheme being carried out and the quota system was abandoned in September 1848, but transportation of convict labour continued.

Grey now considered the dispersion of convicts throughout the Empire as essential and proceeded to canvass the opinion of the various colonies. Before replies arrived in London, Grey dispatched the *Neptune* to the Cape Colony. Reaction to the transport's arrival was violent. The colonists refused to allow the convicts to land, and the Governor, Sir Harold Smith, requested that the vessel be re-routed to Van Diemen's land.

Replies from the colonies about their attitude to transportation indicated that all colonies, with the exception of Swan River (Western Australia), opposed the continuation of transportation. Governor Denison reversed his earlier decision to support the transportation of 4,000 convicts per year to the colony and was openly in opposition to the system. Such an attitude had little effect for the *Neptune*, *Hasbemy* and *Randolph* (all carrying large numbers of convicts) were redirected to Van Diemen's Land during 1848. A total of 20 vessels carrying 1,860 convicts arrived by the end of the year:

Convict Arrivals in Van Diemen's Land: 1848 (a)

Point of Departure	Vessels	Convicts		
		Male	Female	Total
	No.	No.	No.	No.
Overseas—				
Ireland	6	884	555	1,439
New Zealand	5	16	..	16
England	3	33	313	346
India	2	21	..	21
Australian Colonies—				
South Australia	2	23	..	23
New South Wales	1	5	..	5
Victoria	1	10	..	10
Total	20	992	868	1,860

(a) Table prepared from information contained in *A History of Tasmania* by J. Fenton.

It was soon realised that the colony had become the sole depository for the Empire; protest meetings were organised, petitions sent to Earl Grey and the House of Commons and the popular press agitated for the abolition of transportation. Grey refused to compromise stating that '... Van Diemen's Land had been originally intended as a penal settlement, and had no right to refuse to receive any number of prisoners the government chose to send ...'. (John West: *History of Tasmania*.)

Public discontent was soon manifested in the activities of a number of protest organisations which were formed as a result of the re-introduction of transportation. Out of these organisations grew the Launceston Association and the Australasian League.

Growth of Australasian League

Launceston Association

This abolitionist committee was the first of its type formed in the colonies, and the forerunner of the Australasian League. Under the chairmanship of the Rev. John West it gained the support of Messrs Cox, Weston, Douglas, Du Croz and the Rev. Dr Browne, senior chaplain of Launceston, who were also prominent in the birth of the Australasian League.

Australasian League and the Abolition Conferences, 1851 and 1852

The League stemmed from an inter-colonial movement which sought to abolish transportation to Van Diemen's Land. It was feared that the policy of dispersion of ex-convicts throughout Australia would result in an increase of crime and a lowering of moral standards (instances of ex-convict crimes were

sufficiently common to give substance to the theory). A meeting of the Launceston Association on 9 August 1850 passed a resolution seeking the support of all interested bodies and persons to fulfil the Association's self-imposed task. Similar meetings were held in all colonies where resolutions of support were passed.

The abolitionist movement spread rapidly throughout the Australian colonies and by the end of 1850 its supporters felt strong enough to hold an inter-colonial conference. The conference opened in January 1851; delegates from South Australia and New South Wales were unable to attend but pledged their unqualified support.

The Australasian League was formed during the conference, its covenant binding members to: (i) reject convict labour; (ii) work for the cessation of transportation; and (iii) support those who would be adversely affected by the end of transportation.

At the conclusion of the conference an appeal for £20,000 to support the League was opened and within one month £7,000 was subscribed from Melbourne alone.

The colonists of New South Wales expressed interest in the movement and on 1 May 1851 a 'Conference of the United Colonies' opened in Sydney intent on organising and promoting the case for Abolition.

Opposition 'Protection Association'

In October 1850 certain emancipists and ex-convicts formed a 'protection association' against the attacks and slights being made against their group by the proponents of the anti-transportation case. They proposed to elect emancipists to the Legislative Council and to oppose the emigrant free settlers. Little support was forthcoming and after several riotous meetings the movement languished.

End of Transportation to Tasmania

The movement continued to gain strength with the approach of colonial self-government. At the Legislative Council election in October 1851, all sixteen candidates supporting the abolition of transportation were successful. The four candidates standing on a pro-transportation policy were soundly defeated. In Launceston where Richard Dry (later knighted and a Premier of Tasmania) stood against Adye Douglas, a Transportationist, a full scale brawl between the rival factions, broke out in front of the polling booth. The anti-transportation faction was successful both on the 'field' and in the booth. Henry Button, a Mayor of Launceston in commenting later on the brawl claimed 'that the introduction of the system of voting by secret ballot has put an end to the barbarous practice (of publicly declaring one's vote).'

The new Legislative Council opened on 30 December 1851. No mention was made of the cessation of transportation in Sir William Denison's opening address. The colonists were dismayed. Meetings were again held throughout the colony and hopes were placed on the Australasian League. This body was seen as the only effective vehicle through which opposition to transportation could be exhibited.

Pressure on the Westminster government to halt transportation increased and further inter-colonial meetings of the League were held, the most important being in Hobart during April 1852.

In May 1853 the Government *Gazette* carried a proclamation ending transportation to the colony of Tasmania.

The colony celebrated in riotous fashion, public dinners and meetings being held throughout the colony to mark the occasion.

Although transportation ceased in 1853 a residual convict population remained in the colony and it continued to be an economic drain well into the second half of the nineteenth century.

The Australasian League, having successfully completed its work, was no longer required. On 6 April 1854, eleven months after the end of transportation, the League was dissolved. It had been one of the most successful colonial organisations; it had challenged the Westminster government on a policy issue and achieved a radical change in that policy, and more importantly, was the first truly inter-colonial organisation with a single uniform policy.

2. Agitation for Self-Government

Sir William Denison arrived in the colony in 1847 with instructions from the Colonial Secretary, Earl Grey, to investigate the feasibility of an elected legislature.

During the preceding twenty years agitation for self-government had strengthened. By 1847 the hopes of the settlers were high. Many felt that the arrival of Denison heralded a change in the method of government, coupled with an abandonment of governors who were, says West (*History of Tasmania*) 'mere tools of Downing Street, appointed to carry out a huge penal system which was in every way opposed to their best interests'. The colonists were initially disappointed. Denison remained firmly in control and governed without the aid of the Legislative Council throughout the constitutional crises involving the Patriotic Six and the Judiciary during 1847.

In 1843 the New South Wales Legislative Council was created, although nominated until 1847 when two-thirds of the chamber was elected by popular vote. Denison suggested to Earl Grey the creation of a Legislative Council in Van Diemen's Land similar to that in New South Wales, but with a more restricted franchise and its members being either nominated or elected for life rather than at regularly conducted elections. It was suggested that bishops should also be seated in the new chamber.

On being informed of Earl Grey's proposal to the House of Commons for the introduction of a representative house Denison wrote in disparaging terms of the colonial society; '... When we consider the elements of which society here is composed; when we see the low estimate that is placed upon everything which can distinguish a man from his fellows, with the sole exception of wealth; when we see that wealth does not even lead to distinction, or open the road to any other ambition than that of excelling in habits of self indulgence; it can hardly be subject of surprise that so few are found to rise above the general level or that those few owe more to the possession of certain oratorical facility than their powers of mind, or the justness of the opinions which they advocate.' He then turned to the emerging democratic feeling of the colonists and renewed the attack. 'There is an essentially democratic spirit which actuates the large mass of the community and it is with a view to check the development of this spirit, of preventing its coming into operation that I would suggest the formation of an Upper Chamber.'

Considerable indignation was aroused when the colonists received word of Denison's accidentally published letter to Earl Grey and opposition to the Governor and his policies reached new heights. Denison lost popular support through his comments to Earl Grey and added weight to the claims of his opponents that he was merely in Van Diemen's Land to maintain the status quo.

During the constitutional crises of 1847 he was forced to act against popular sentiment and as a result became disliked by the colonists.

Background

The Patriotic Six

Following a clash with Governor Eardley-Wilmot in October 1845 six members of the Legislative Council—Messrs Swanston, Kermode, Dry, Kerr, Fenton and Gregson withdrew denying Wilmot a quorum in the House. This action prevented the passage of an Appropriation Bill and precipitated a clash between the colonists and the Crown. Sir John Eardley-Wilmot declared the 'resignation' of the six members in the *Gazette* of 4 November 1845 and proceeded to appoint six new members to the Legislative Council.

Public support for the 'Patriotic Six' was rapidly forthcoming. Dry and Gregson were treated as heroes in the '... noble struggle against tyranny and oppression'; public meetings pledged support for the deposed members.

Re-instatement of the 'Six'

On the arrival of Sir William Denison the Patriotic Six and their replacements were called together in an endeavour to decide who should hold seats in the Legislative Council. Denison was informed that both sets of gentlemen had received Royal Assent to their appointments and therefore he could choose six out of the twelve to fill the vacant seats. At first it was proposed that six of their number should be selected by the twelve, but no decision could be reached on the composition of the six. Denison then re-appointed the Patriotic Six to the Legislative Council to replace the 'New Six'. The New Six objected to this decision and claimed (with the support of the Chief Justice) that their tenure of office should continue until they were suspended by Royal Proclamation. It was subsequently discovered that their appointments were technically invalid as no declaration had been made on their appointments as to whom they replaced which meant that the Patriotic Six were the legal holders of the seats. One of the New Six, Mr Orr, had entered the Council some time after his colleagues and it was found that his appointment was in order. Denison had no alternative but to prorogue the Council until a decision on the matter was obtained from Westminster, a time lag of twelve months. Ultimately the Patriotic Six appeared in the *Gazette* (1848) as being appointed to the vacant seats.

Impact of the Conflict

The failure of the Legislative Council to be a viable organisation during 1847 placed Sir William Denison in a difficult position. The conflict with the Judiciary and the debate concerning the *Dog and Differential Duties* Acts would have been avoided had the Legislative Council been assembled and able to amend the legislation, but due to the Patriotic Six dispute this could not be done.

Introduction

Conflict with the Judiciary

The colonial Legislative Council had the right to levy taxes for local purposes only; such purposes being clearly defined in the body of the particular Appropriation Bill. During the governorship of Sir John Eardley-Wilmot

the *Dog Act* 1847 and the *Differential Duties Act* 1847 were passed, omitting the specific purposes for which the money raised was to be used. The judiciary initially accepted the acts but later reversed its decision, declaring them to be unconstitutional because the specific appropriation clause had been omitted.

Mr Morgan and the Dog Act

Opposition to the imposition of dog licences grew throughout the colony; many paid the fees under protest while some settlers ignored the act entirely. One such person was Mr Morgan, the editor of the journal *Britannia*. He publicly challenged the legality of the legislation by declaring that he had not paid the dog licence and most certainly would not pay it in the future. The administration was forced to take action and fined him in the Lower Court. Morgan appealed to the Quarter Sessions, where the original decision was upheld and to the Supreme Court, where Chief Justice Pedder and Mr Justice Montagu ruled that the *Dog Act* 1847 was unconstitutional and should be set aside.

The decision to declare illegal the *Dog Act* 1847 had wider implication as the *Differential Duties Act* 1847 had been structured in a similar manner. The merchants of the colony, hostile to what was in effect a 15 per cent tariff on goods imported from the mainland colonies and New Zealand, commenced legal action to recover the £20,000 previously paid to the Crown under the Act.

Denison reacted violently to the decision of the Bench, attacking the judges as having gone beyond their legal powers and charging them with dereliction of duty.

As the Legislative Council had been suspended awaiting a decision on the Patriotic Six, the Governor decided 'to act on the authority of the Executive'. He felt the only solution to the current problem was the removal of the judges and this he attempted to do. Other members of the Executive opposed such action and prevailed upon Denison to act with caution. The Governor ignored their offer of advice and dismissed Mr Justice Montagu.

Dismissal of Judge Montagu

The Puisne Judge of the Supreme Court, Mr Justice Montagu was sued for £200 by a creditor, but the case could not be heard because of the privilege of the judge's office. Governor Denison requested Montagu's resignation pending litigation, re-instatement depending upon the outcome of the action. Judge Montagu refused claiming an 'understanding' with the creditor; Denison charged Montagu 'with perverting the protection of his office' and dismissed him. Mr Thomas Horne, the Attorney-General, was appointed to fill the vacancy. As Attorney-General, Mr Horne had framed the acts repudiated by the judiciary. It was obvious that he would support the Crown in the test case to determine the legality of the *Differential Duties Act* 1847 and considerable criticism was made of Denison's action by the colonists but to no avail.

Test Case

At the conclusion of Mr Morgan's successful challenge to the *Dog Act* 1847 a group of colonial merchants challenged the *Differential Duties Act* 1847 seeking to: (i) have the act declared illegal under the conditions governing local appropriation bills; and (ii) to recover the £20,000 duty already paid to the Crown. Proceedings were temporarily suspended with the dismissal of Judge Montagu, but continued under the watchful eye of his successor, Mr Justice Horne.

The legality of Judge Horne's position and his decision on the case was questioned as he had drafted the disputed act. The Registrar of the Supreme Court was called before the Executive Council and asked for his interpretation of the legality of Judge Horne's position. He replied that 'in the event of a division of opinion on the bench a verdict for the plaintiff would stand' (i.e. for the merchants).

Denison was now placed in a difficult position, if Chief Justice Pedder and Mr Justice Horne agreed that the Duties Act was illegal, the Crown lost—this was unlikely but possible. In the event of a disputed decision the Crown also lost, following the ruling by the Registrar of the Supreme Court. The chances of both judges declaring the act legal were slim as Chief Justice Pedder had already stated that he believed the act to be illegal. The Governor now considered the suspension of the Chief Justice—an action opposed by the Executive Council. In the face of this opposition Denison changed his plan and requested of the Chief Justice that he ask for leave-of-absence. His Honour declined stating: 'Were I . . . to accept your Excellency's proposal, I should, it appears to me, be forever after degraded, and, *ipso facto*, render myself unworthy of holding the lowest office or employment which it is in her Majesty's power to bestow on a subject.' (West.) Before further action was required the Legislative Council warrants for the Patriotic Six arrived from Great Britain; the Governor could now convene Parliament and either annul the laws opposed to the provisions of the Parliamentary Act or pass a bill declaring the acts legal. He chose the latter course of action, and the *Doubts Bill* 1847 'declared that an ordinance once enrolled, whatever its provisions, or however repugnant to common law or parliamentary acts, should be held binding on the court . . .'. The bill was opposed by Chief Justice Pedder and five members of the Legislative Council but a sufficient number of members supported the bill for it to become law.

Aftermath

Chief Justice Pedder was harshly treated by the House of Commons being severely censured and reproved despite thirty years of service. The removal of Mr Justice Montagu and his replacement by Thomas Horne was approved at the same time as the Chief Justice's censure.

The action of the merchants in challenging the Differential Duties Act was attacked in a letter to the Legislative Council. This attack led to a spirited defence of their actions by the merchants of the colony who claimed ' . . . that every illegal demand is spoliation . . .'. Some 1,500 persons signed a petition supporting the merchants and condemning Denison's action against the Supreme Court, but no success came from this move and the action of the Governor was approved with the exception of the attempted coercion of the Chief Justice. West (*History of Tasmania*) effectively summarises the reasons why the colonists failed in their action against Denison—'When the dispute is between persons in high office the established policy does not predicate the result; but when a mere colonist complains he will find no precedent in Australian history to cheer him in his task. Gross instances of oppression have not infrequently occurred; but in the Australian journals of half a century no example is recorded of a governor's recall on such grounds, or of such a censure on his conduct as might influence the habits of colonial rulers.'

Despite the failure of the colonists to successfully challenge the authority of the Governor and thereby extend their share of power in the Colonial Parliament, success was achieved with the aid of outside support.

The Colonial Secretary, Earl Grey had proposed early in 1846 the creation of self-governing colonies in Australia. Denison, the other colonial Governors

and the 'colonial Establishment' opposed Grey but the Colonial Secretary continued with his plan to grant self-government. He presented a Privy Council committee report to Parliament embodying: (i) the establishment of Legislative Councils in all colonies capable of supporting a Civil list; (ii) one-third of Council members to be nominated, the remainder freely elected; (iii) the division of the Legislature into two chambers to be at the discretion of the colony; and (iv) the establishment of a Federal Assembly, the *House of Delegates*, for the Australian colonies. The *House of Delegates* was to consist of between 20 and 30 delegates (two from each colony and one additional member for every fifteen thousand persons). In general the provisions of the bill were well received although some opposition was shown to the federal provisions for even at that stage of colonial development resentment towards, and fear of, domination by New South Wales was barely hidden. West (*History of Tasmania*) summarises the feelings of the colonies as follows: 'It was hailed at Port Phillip because it secured separation from Sydney; in South Australia, as certain to terminate the ecclesiastical endowments; and in Van Diemen's Land it was welcomed, with all its faults, as the engine sure to destroy transportation.'

Polling for the first partially elected Legislative Council took place in October 1851. Emmett in his work, *A Short History of Tasmania*, claims the poll was significant because control of the legislature and, therefore, the government passed into the hands of the colonists, '... Denison thereafter had not the absolute power of his predecessors for measures objectionable to the elected representatives were promptly rejected.'

Self-government had been achieved by the Van Diemen's Land colonists, but transportation continued until 1853. Parallel with the struggle for self-government ran the fight to end transportation. Often the two coalesced or moved into a 'grey' area where demarkation between the two movements was difficult to define. In Van Diemen's Land the struggle was particularly interwoven and prominent figures agitating for self-government also appeared in the struggle to end convict transportation.

The form of the Bill was changed during its passage through the British legislature. The principle of a Federal House was abandoned—to become a significant issue some fifty years later—and the franchise was reduced to allow almost household suffrage and enabled the emancipists (ex-convicts) to control the legislature in New South Wales and Van Diemen's Land.

Lord John Russel during the debate expressed a desire to see the colonies given the right to govern themselves, and for the colonies to prosper and grow within the confines of the Empire.

The announcement of the arrival of the Bill in Australia led to a period of festivity and celebration in the colonies particularly in Victoria, as this colony at the same time as being granted self-government was separated from New South Wales. At Port Phillip '... several days were devoted to processions and feasting. Numberless devices were exhibited, displaying the political bias of the people. Many thousands of pounds were spent in festivities.'

The two most important milestones in the history of Van Diemen's Land had been passed by the end of Denison's term as Governor. Self-government had been achieved and transportation halted. He also left the colony in a more developed state than he had found on his arrival in 1847.

Denison, although centre of a political struggle for seven years, was well liked by the colonial population, his departure to take up the post of Governor of New South Wales in 1854 being much regretted by the colonists, who in tribute presented him with a silver service valued at £2,000.

*Education***Other Features of his Administration**

Like Sir John Eardley-Wilmot before him Sir William Denison had a high regard for education and the benefits it could bring to the colony. To balance the granting of land in 1846 for two denominational schools (the Hutchins School, Hobart, and the Church Grammar School, Launceston). Denison bowed to public pressure and granted five acres of the Queen's Domain for the establishment of the Hobart High School. Public response to this grant was immediate and a public fund rapidly subscribed £5,000 to be invested to cover the recurrent expenditure of running the school. Opened in 1850, the school experienced a period of difficulty and languished as the first rector, the Rev. J. B. Froude resigned after publishing a controversial work the *Nemesis of Faith* and the second, James Eccleston died one month after the opening of the school. The school recovered following the appointment of the Rev. R. D. Poulett-Harris in 1857 and from this date it developed steadily until its closure in the early 1890s to make way for the newly established University of Tasmania which commenced lectures in 1893.

During Denison's period as Governor the newly established Hutchins School developed into one of the foremost educational institutions in the colony.

In 1846 Christ's College was opened at Bishopsbourne. The initial success of the college was short-lived, the school being closed in 1847 and its library transferred to Christ College, Hobart.

Public Works

Important trunk roads and bridges were constructed during Denison's term of office. The north, south and eastern parts of the colony were by now inter-connected by road. At the outbreak of the Crimean War Denison had batteries constructed for the defence of Hobart Town. His early training as a military engineer served him well and was in fact one of the reasons he was chosen for the Van Diemen's Land appointment.

Departure

Sir William Thomas Denison left the colony on 13 January 1855. His departure was regretted by the colonists as he was the only governor since Colonel George Arthur to leave the colony without some taint on his character.

Following a period of seven years in New South Wales, he was appointed Governor of Madras. In November 1863 following the death of Lord Elgin he temporarily became Governor-General of India.

After Denison's retirement as Governor of Madras in 1866 he returned to England and in 1868 was appointed chairman of a royal commission investigating pollution of British rivers, a position he held until his death on 19 January 1871.

PROFILE OF A PREMIER: SIR FRANCIS SMITH**Introduction**

Francis Smith, the eldest of eight children, migrated to Van Diemen's Land with his family in 1828. His father acquired a fine estate, known as 'Campania', which remained in the family for many years.

Smith returned to England for his education, first taking a B.A. degree at London University. After some medical studies, he undertook a law course and obtained honours in the final examination. He was called to the Bar in 1842.

Colonial Law Career

He subsequently returned to Van Diemen's Land and, after a few years of private practice, became successively Crown Solicitor, Solicitor-General and Attorney-General (Tasmania was still a Crown Colony, without parliamentary government, at this stage). In the late 1840s and early 1850s the most contentious issue was the cessation of transportation, the Governor (Sir William Denison) strongly favouring its continuance. Council members were expected to support the Governor, but Mr Smith insisted on a condition whereby he would have the right to exercise liberty of conscience on the matter. The Governor conceded as Smith's services were so valuable.

Premier

On the introduction of parliamentary government in 1856, Smith was granted a sum of £4,500 as compensation for loss of office. He was subsequently appointed to the first Ministry as Attorney-General and was later elected as member for Fingal in the House of Assembly on 14 May 1857. He served as Premier and Attorney-General from this date until 1 November 1860, when he became Puisne Judge of the Supreme Court, upon the retirement of Mr Justice Horne.

During Francis Smith's 42-month term as Premier, a substantial amount of significant legislation was passed concerning such matters as public works, conservation, education, establishment of rural municipalities and jurisdiction of courts.

Chief Justice

He was an excellent judge, receiving a Knighthood and later becoming Chief Justice when Sir Valentine Fleming retired in 1870. On several occasions Sir Francis acted as Government Administrator. He retired to London in 1883 with a good pension and died at the age of 90 in 1909.

In appearance, Sir Francis was short, swarthy with forbidding features and a rather irritable temper. He was keenly interested in music, being a pianist himself. He had four children and owned 'Lindfield' which stood in several acres in Holebrook Place (now upper Davey Street). The family took a leading part in social matters: Sir Francis was the first president of the Tasmanian Club (est. October 1861).

CHRONOLOGY

Preface

The following chronology was compiled in two sections, the period 1642 to 1929 from a document specially prepared by officers of the State Archives, and the period beginning 1930 from a search of contemporary newspapers by Bureau officers.

In the record of more recent years, it was found impossible to describe purely Tasmanian events in isolation since certain national events necessarily form a part of the history of a State within a federal system; particularly is this true with regard to some Commonwealth Government decisions, the state of the economy and industrial arbitration. On the other hand, there is the difficulty of deciding which events of a purely local character are sufficiently important to warrant inclusion. Obviously Tasmania's first Parliament in 1856 is an item appearing more worthy of permanent record than Hobart's adoption of parking meters in 1955. This difficulty of selection is partly avoided by giving

the record of recent years in considerably more detail but inevitably such a policy results in matters of major and minor importance being mingled without distinction. It follows also that the second part of the chronology is limited largely to what the newspapers of the day considered important and that some events of greater significance may have escaped notice.

To round off the picture of any given year, there is a constant temptation to introduce events of world importance; as far as possible, this has been avoided except where such events had considerable local impact, for example, the sighting of a space satellite overhead, a war involving Australians or the death of a Prime Minister. In no way should the record which follows be interpreted as an 'official' chronology of the State; in actual fact, the record derives from two levels of subjective evaluation, firstly, the selection of items of importance by contemporary journalists, and secondly, the further selection from this narrowed field of items that appeared important to the compilers of the chronology. Some items have been introduced not because they are important but because they have a strong local flavour, for example, the suspected sighting of a Tasmanian Tiger, the winning yacht in the Sydney-Hobart race or an isolated football victory over a V.F.L. side.

Chronology of Events from First Discovery of Tasmania

- 1642 Abel Janszoon Tasman, commanding *Heemskirk* and *Zeehan*, sighted west coast and named his discovery 'Anthony Van Diemenslandt'. Landings on Forestier Peninsula and near Blackman Bay on east coast.
- 1772 Landing of a party from Du Fresne's expedition at Marion Bay and affray with aborigines.
- 1773 Tobias Furneaux, in the *Adventure*, became separated from James Cook in *Resolution* and landed party at Adventure Bay.
- 1777 James Cook anchored *Resolution* in Adventure Bay on third expedition.
- 1788 William Bligh anchored *Bounty* in Adventure Bay on first breadfruit expedition.
- 1789 John Henry Cox sailed *Mercury* from Cox Bight to Maria Island.
- 1792 William Bligh, on second breadfruit voyage, anchored *Providence* in Adventure Bay. Bruny D'Entrecasteaux, commanding *La Recherche* and *L'Esperance*, discovered D'Entrecasteaux Channel and charted south-east coast.
- 1793 D'Entrecasteaux returned for further exploration of south-east coast. John Hayes, commanding *Duke of Clarence* expedition, explored Derwent River.
- 1798 Matthew Flinders and George Bass circumnavigated Tasmania.
- 1802 Nicholas Baudin, commanding *Geographe* and *Naturaliste*, explored south-east coast.
- 1803 John Bowen's party of 49 made first settlement at Risdon Cove.
- 1804 David Collins' settlement party landed at Sullivan's Cove (Hobart). Aborigines killed in an affray at Risdon. Risdon settlement closed down. William Paterson's settlement party landed at Port Dalrymple (Tamar Estuary).
- 1805 Collins forced by famine to cut rations by one third.
- 1806 Settlers moved from York Town to Launceston area (Tamar Estuary).
- 1807 Thomas Laycock's party crossed island overland from Port Dalrymple to Hobart. First Norfolk Island settlers shipped to Hobart in *Lady Nelson*.

- 1809 Governor William Bligh aboard *Porpoise* anchored in Derwent after N.S.W. mutiny and embarrassed Collins with problem of jurisdiction.
- 1810 Lieutenant-Governor Collins' death. Issue of the newspaper *Derwent Star*.
- 1811 Governor Macquarie's first visit to Tasmania.
- 1812 Lieutenant-Governor Thomas Davey arrived. Northern settlement at Port Dalrymple made subordinate to Hobart. *Indefatigable* brought first shipload of convicts direct from England.
- 1815 Hobart and Port Dalrymple declared free ports for import of goods. Davey proclaimed martial law against bushrangers. James Kelly circumnavigated island in a whaleboat.
- 1816 First issue of *Hobart Town Gazette*.
- 1817 Succession of William Sorell as Lieutenant-Governor.
- 1818 Death of Michael Howe, notorious bushranger.
- 1820 Visit by John Thomas Bigge to conduct his enquiry into colonial administration.
- 1821 Second tour by Governor Macquarie.
- 1822 Penal settlement established at Macquarie Harbour.
- 1823 Passage of British Act 'for the better administration of justice in N.S.W. and Van Diemen's Land'.
- 1824 Inauguration of Supreme Court. Arrival of Lieutenant-Governor Arthur.
- 1825 First Launceston newspaper, the *Tasmanian and Port Dalrymple Advertiser*, established. Tasmania constituted a colony independent of N.S.W. Establishment of appointed Executive and Legislative Councils. Departure of Governor Darling from Tasmania left Arthur with the authority of Governor (but not the title).
- 1826 Van Diemen's Land Co. sent first party. Appointment of Commissioners of Survey and Valuation.
- 1827 Colonial Act passed for the regulation of the colonial press—disallowed. Lieutenant-Governor received petition for trial by jury and some representation in Legislative Council.
- 1828 Passage of British Act 9 Geo. IV, cap. 83 which increased membership of Legislative Council. Martial law proclaimed against aborigines.
- 1830 George Augustus Robinson began his mission to conciliate the aborigines. First use of juries in civil cases. Beginning of the 'Black Line', the military campaign to round up the aborigines. First volume of *Quintus Servinton*, first novel to be published in Australia. Port Arthur established as a penal settlement.
- 1831 Approval of British Government's new land regulations discontinuing free grants of land, and replacing them with land sales.
- 1832 First shipment of aborigines to Straits islands. Establishment of the Caveat Board to settle land disputes and to confirm titles. Maria Island closed down as a penal settlement.
- 1833 Macquarie Harbour penal settlement closed down.
- 1834 Henty brothers from Launceston became first settlers in Victoria occupying land in Portland Bay area.
- 1835 John Batman sailed from Launceston to Port Phillip as agent for the Port Phillip Association. Tasmania divided into counties and parishes. Opening of Ross Bridge. Population estimated as 40,172 persons.

- 1837 Arrival of Sir John Franklin and assumption of office as Lieutenant-Governor.
- 1838 Sessions of Legislative Council opened to the public.
- 1840 Cessation of transportation to N.S.W. and consequent increase in numbers transported to Tasmania. Population estimated as 45,999 persons.
- 1841 Assignment System of convict discipline replaced by the Probation System. Rossbank Observatory for magnetic and meteorological observations established.
- 1842 Tasmania created a separate Anglican diocese. Hobart made a city. Peak year for convict arrivals (5,329).
- 1843 Recall of Sir John Franklin and succession of Sir John Eardley-Wilmot.
- 1844 Transfer of Norfolk Island penal settlement from N.S.W. to Tasmanian control.
- 1845 Resignation of the 'Patriotic Six' members of the Legislative Council, opposing the heavy expenditure of colonial revenue for Imperial police charges.
- 1846 Recall of Wilmot. Foundation of the Launceston Church Grammar and the Hutchins Schools.
- 1847 Succession of Sir William Denison. The Lieutenant-Governor re-appointed the 'Patriotic Six', dispensing with those who had replaced them as Legislative Councillors.
- 1848 Tasmania now the only place of transportation in the British Empire.
- 1850 Foundation of the Anti-Transportation League. Population estimated as 68,870 persons.
- 1851 British Act 'for the better governing of the Australian colonies' reached Tasmania; provided for limited representative government. First elections for 16 non-appointed members of Legislative Council.
- 1852 First payable gold found near Fingal. Elections held for first municipal councils in Hobart and Launceston.
- 1853 Arrival of last convicts to be transported.
- 1854 Bad floods throughout colony. Passage of Bill establishing responsible government.
- 1855 Succession of Sir Henry Fox Young; title now Governor. British Government approved Constitution Bill.
- 1856 Name of Van Diemen's Land changed to Tasmania. Opening of new bi-cameral Parliament with W. T. N. Champ leading first government in the House of Assembly. Reorganisation of Police Department.
- 1858 Council of Education set up. Rural Municipalities Act passed.
- 1859 Charles Gould appointed to make geological survey of western Tasmania. Telegraph established as link with Victoria.
- 1860 Population estimated as 89,821 persons.
- 1861 Succession of Colonel Thomas Gore Browne. Telegraph cable to Victoria failed.
- 1862 Promotion of scheme for a railway between Launceston and Deloraine.
- 1864 Arrival of first successfully transported salmon ova.
- 1868 Visit by Alfred, Duke of Edinburgh. Bill passed making primary education compulsory.

- 1869 Succession of Charles Du Cane. Death of William Lanne, thought to be last male full-blood aborigine. Death of Sir Richard Dry. New cable laid to Victoria.
- 1870 Withdrawal of remaining Imperial troops. Population 99,328 persons (Census).
- 1871 Opening of Launceston-Deloraine railway.
- 1872 Contract concluded for building Main Line Railway.
- 1873 Main Line Railway construction began. Tin discovered at Mt Bischoff. Start of economic recovery.
- 1874 Riots in Launceston in protest at rates levied for Launceston-Deloraine railway.
- 1875 Succession of Sir Frederick Weld.
- 1876 Race meetings established at Elwick. Gold nugget worth \$12,200 found at Nine Mile Spring. Death of Trugannini, thought to be last female full-blood aborigine. Main Line Railway opened for traffic.
- 1877 Port Arthur closed down as a penal settlement.
- 1878 Increased activity in exploration of West Coast.
- 1879 Settlement of constitutional issue known as the 'Hunt Case'. Rich lode of tin discovered at Mt Heemskirk.
- 1880 First telephone in Tasmania with line from Hobart to Mount Nelson Signal Station.
- 1881 Purchase of three diamond drills by government for hire to private prospectors. Succession of Sir George Strahan. Population 115,705 persons (Census).
- 1882 Increased prospecting on West Coast.
- 1883 Discovery of the 'Iron Blow' at Mt Lyell.
- 1885 Russian war scare followed by activity in improvement of defences. Formation of Mt Lyell Prospecting Association.
- 1886 Adye Douglas, Tasmanian Premier and President of the Federal Council, spoke in favour of Australian republicanism.
- 1887 Succession of Sir Robert Hamilton.
- 1890 Establishment of University of Tasmania.
- 1891 Collapse of Van Diemen's Land Bank; deep economic depression. Population 146,667 persons (Census).
- 1892 Mt Lyell Mining Co. established.
- 1893 Succession of Viscount Gormanston.
- 1896 Establishment of Tattersalls Lottery by George Adams.
- 1897 Record shade temperature of 105.5°F at Hobart on 30 December.
- 1898 Serious bush fires. Polling 4 to 1 by Tasmanians in favour of Federation.
- 1899 Departure from Hobart of *Southern Cross* (Borchgrevinck) expedition to Antarctic.
- 1900 Departure of Tasmanian contingents to fight in the Boer War.
- 1901 Proclamation of the Commonwealth read. Polling for first elections to Federal Senate and House of Representatives. Visit of the Duke and Duchess of Cornwall and York. Succession of Sir Arthur Havelock. Population 172,475 persons (Census).
- 1903 Celebration of 100 years' settlement cancelled because of smallpox epidemic in Launceston. Suffrage extended to women.

- 1904 Succession of Sir Gerald Strickland at reduced salary.
- 1905 Experiments in wireless telegraphy between Tasmania and the continent and between Tasman Island and Hobart.
- 1906 Visit by Ramsay MacDonald (later British Prime Minister).
- 1907 New Public Library opened; built with gift from Andrew Carnegie.
- 1909 Succession of Sir Harry Barron. Potato crop wiped out by Irish blight. State's first Labor government under J. Earle.
- 1911 Population 191,211 persons (Census).
- 1912 Disasterous fire at North Lyell Mine, Queenstown.
- 1913 Succession of Sir William Ellison-Macartney.
- 1914 First aeroplane flight in Tasmania. Departure of first Tasmanian contingent to fight in Great War. Second State Labor government formed under John Earle. Formation of Hydro Electric Department.
- 1915 Serious bushfires.
- 1917 Establishment of electrolytic zinc works at Risdon and of Snug carbide works. Succession of Sir Francis Newdegate.
- 1918 End of Great War.
- 1919 First export of frozen meat.
- 1920 Visit by Edward, Prince of Wales. Establishment of Cadbury's chocolate factory at Claremont. Succession of Sir William Allardye.
- 1921 Population 213,780 persons (Census).
- 1922 Completion of Waddamana power station.
- 1924 Succession of Sir James O'Grady. First superphosphate manufactured by Electrolytic Zinc Co. at Risdon.
- 1925 Discovery of osmiridium fields at Adamsfield.
- 1927 Enquiry into proposed bridge over Derwent. Visit by Duke and Duchess of York.
- 1929 Serious floods throughout island. Establishment of automatic telephone system in Hobart. Beginning of economic depression.
- 1930 Export prices fell to half 1928 level. Australian pound devalued so that £ sterling equalled £A 1.25 (\$A 2.50).
- 1931 Depression continued—10 per cent cut in Federal basic wage. Initiation of austere Premier's Plan. Conversion loan to reduce rate on internal Federal debt by 22½ per cent. Census of population deferred due to economic crisis.
- 1933 Census of population—Tasmania, 227,599 persons. Succession of Sir Ernest Clark. Commonwealth Grants Commission appointed to enquire into affairs of claimant States.
- 1934 Labor Ministry of A. G. Ogilvie first in 35 years of continuous Labor governments. Second phase of hydro-electric development commenced at Tarraleah and Butlers Gorge.
- 1936 Tasmania linked with Victoria by submarine telephone cable.
- 1937 Epidemic of poliomyelitis. Economic recovery evidenced by \$0.50 'prosperity' loading added to Commonwealth basic wage.
- 1938 Paper mill using native hardwoods established at Burnie. First turbines began operating at Tarraleah power station.
- 1939 Outbreak of World War II.

- 1940 Tasmanians sailed for Middle East with Australian 6th, 7th and 9th Divisions.
- 1941 Newsprint production began at Boyer on the Derwent. Tasmanians sailed for Malaya with Australian 8th Division.
- 1942 Uniform Federal income tax commenced.
- 1943 The floating-arch Hobart Bridge opened for traffic.
- 1944 Pay-as-you-earn income taxation introduced from 1 July.
- 1945 End of World War II. Succession of Sir Hugh Binney.
- 1946 Cessation of man-power controls. Rejection by Legislative Council of bill to grant Federal Government price control powers for three years. Referendum gave Commonwealth power in regard to social services but refused power over marketing and employment. Crash of DC3 airliner at Seven Mile Beach with 25 deaths.
- 1947 Census of population—Tasmania, 257,078 persons. Federal arbitration decision favouring 40-hour week. Court action to stop bank nationalisation by Federal Government. Demobilisation of forces completed. 'Displaced persons' commenced arriving from Europe.
- 1948 Forty-hour week awarded to most workers from 1 January. Tasmanians voted 'No' almost 2 to 1 in referendum denying Federal Government power over prices and rents. State price and rent controls introduced. Legislative Council's denial of supply forced dissolution of House of Assembly—Cosgrove ministry returned to power. High Court ruled against bank nationalisation. Abolition of toll on Hobart Bridge.
- 1949 Compulsory X-ray introduced in fight against tuberculosis. Clark Dam at Butlers Gorge completed. Theatre Royal purchased by the Government. Port of Hobart held up by 29-day strike; coal supplies cut off by major strike on N.S.W. coalfields and at Tasmanian mines. Sterling devalued by 30.5 per cent and Australian pound similarly devalued. Outbreak of poliomyelitis caused cancellation of Hobart Show. Federal Labor government defeated at elections and Liberal government installed.
- 1950 End of Federal petrol rationing. Dissolution of House of Assembly granted by Governor and Cosgrove ministry returned to power. Start of Korean War. Federal basic wage increase of \$2.00 followed by State Wages Boards. Communist Party Dissolution Bill passed by Federal Parliament.
- 1951 Serious bushfires in January and February. Succession of Sir Ronald Cross. Electric power rationing introduced due to prolonged drought. Communist Party Dissolution Act declared invalid by High Court. Double Dissolution of Federal Parliament. Part of Macquarie Harbour frozen over on 2 July. Hobart Federal basic wage increased from \$16.50 (February) to \$19.90 (November). First intake of National Service trainees entered Brighton camp. Referendum to give Commonwealth powers in regard to communism—'No' vote prevailed although Tasmanians expressed slight preference for 'Yes'. Announcement of drastic Federal anti-inflation budget—economic effects of record wool prices and the Korean war becoming apparent.
- 1952 Inflation continued—Hobart Federal basic wage rose from \$20.80 (February) to \$23.00 (November). Single licensing authority established for hotels, clubs, etc. First women elected to Hobart City Council. Two women elected to Legislative Council. Bad floods in Derwent Valley. Artificial lake, King William, filled to capacity.

- State free hospital scheme ceased on acceptance of Commonwealth insurance scheme. State Racing Commission established. Rejection by Legislative Council of bill to give State aid to private schools.
- 1953** Inflation continued—Hobart Federal basic wage rose from \$23.20 (February) to \$24.20 (August). In September, Court abandoned system of quarterly adjustment of Federal basic wage. Special Premier's conference discussed return of income tax powers to States but no action followed. Armistice in Korea. Announcement of transfer to Victoria by Tattersalls Lottery. State Wages Boards decided to follow Federal Court in suspension of quarterly basic wage adjustments.
- 1954** Royal visit by Queen in liner *Gothic*. Completion of Trevallyn tunnel for hydro-electric power. Menzies government re-elected. Bad floods in South with much damage in Hobart Rivulet area. Rationing of electric power ended. Bill to increase House of Assembly to 35 members defeated in Legislative Council. Census of population—Tasmania, 308,752 persons. State prices control organisation disbanded. Federal Arbitration Court awarded margins based on two and a half times their 1937 level. Bill passed to resolve deadlocks in House of Assembly. Foundation of the Metropolitan Transport Trust.
- 1955** Nubeena suffered damage from tidal wave. Uranium ore discovered at Mt Balfour and Royal George. Bell Bay aluminium plant officially opened. Cosgrove ministry returned to power without effective majority. First women (two) elected to House of Assembly. Australia's first capital city parking meters installed in Hobart. Trevallyn turbines started operating. Tungatinah scheme officially opened. Anti-Communist Labor Party (later the D.L.P.) formed in State. Drastic cut in imports enforced under Federal licensing provisions. State visited by Earl of Home (later British Prime Minister). Tasmanian Lotteries announced \$500,000 prize for sweep. Tasmania's first woman mayor (Launceston). Menzies government re-elected.
- 1956** State Wages Boards' restoration of 'cost-of-living' adjustments effective from 1 February. Watersiders strike at Tasmanian ports for 22 days. Mile-long Wayatinah tunnel bored through for hydro-electricity. Tasmanian Lotteries announced \$1,000,000 prize for sweep. Passage by Legislative Council of long-service leave bill. Bad floods State-wide in May. Federal Court increased basic wage \$1.00. State granted \$2.60 increase to own employees. State Wages Boards again suspended cost-of-living adjustments. Deadlocked Premiers' Conference failed to agree on uniform wages policy as counter to inflation. Minister for Housing joined Liberal Party, depriving State Government of its majority. Sir Ronald Cross flew from Colombo and granted dissolution of House of Assembly. Labor returned to power in State. Official opening of E.Z. Co's sulphate of ammonia plant. Centenary of self-government celebrated.
- 1957** Parking meters introduced in Launceston. 88-year-old Mt Nicholas coal mine closed down in Fingal Valley. Legislative Council rejected bill giving aid to private schools. Serious recession in timber industry. Substantial relaxation of Federal import curbs. First fall for three years in 'C' series index (March quarter). Federal court increased basic wage \$1.00. Clarence rate-payers voted to replace elected Council with appointed Municipal Commission. High Court upheld principle of uniform income tax (challenged by Victoria and N.S.W.). Severe flooding in Hobart. 'Comprehensive High School' policy announced. First space satellites—Sputniks I and II—seen over State.

Keel laid of *Princess of Tasmania*. Commonwealth announced greater financial aid to Universities, following Murray Report. Centenary of Hobart's incorporation celebrated.

- 1958 Unsuccessful agitation by churches and other bodies for re-opening of Orr case. Federal court increased basic wage by \$0.50. Bad floods in Derwent Valley. Establishment of Rivers and Water Supply Commission. Four-mile long Liapootah tunnel bored through for hydro-electricity. Mr Cosgrove succeeded by Mr Reece as Premier. Number of Supreme Court Judges increased to five. Commercial licence granted to Tasmanian Television Ltd. Menzies government re-elected. Public Service Tribunal established as industrial authority. *Princess of Tasmania* launched. Army food science establishment commenced operations at Scottsdale.
- 1959 Hobart temperature 105°F on 20 January. Extensive bushfires. New Licensing Act further restricted Sunday drinking. New system of increased Commonwealth grants for State roads. Dissolution of House of Assembly. First election to fill 35 seats in House of Assembly; Labor re-elected. Succession of Lord Rowallan. Federal Court awarded \$1.50 increase in basic wage. New Commonwealth system of grants reduced claimant States to two—Tasmania and W.A. High Court verdict in Hursey case upheld right of unions to strike levies for political purposes. *Princess of Tasmania* commenced roll-on roll-off ferry service Melbourne to Devonport. One-way street traffic plan introduced in Hobart. Visit by Earl Attlee (ex-Prime Minister of Britain). Brooker Highway open for traffic between Elwick Road and Cleary's Gates. Federal Court granted 28 per cent increase in margins. Tender accepted for new bridge across Derwent to be finished in three years. Severe hail damage in Huon Valley.
- 1960 Liapootah power station commissioned. Kingborough Council replaced by Municipal Commission. Zeehan-Strahan railway closed. Inland Fisheries Commission created. First Tasmanian telecast. Federal Court refused basic wage increase. Severe floods in central Hobart and Derwent Valley; flood relief fund opened for victims. In football, Tasmania defeated the V.F.L. Tasmanian Lotteries surrendered licence. Negotiations begun for sale of Commonwealth interest in Bell Bay aluminium plant. State Parliament ignored committee's report recommending increased members' salaries. Royal Flying Doctor Service commenced in State. Australian 'give way to right' rule introduced. Last Hobart trams ceased running. *Bass Trader*, a trailer-container vessel, launched. Hobart Gaol vacated, the new prison being at Risdon.
- 1961 Government initiated plan for bulk water supplies to west bank of Derwent. *Bass Trader* commenced service to Melbourne from northern ports. Concern at growing unemployment followed by easing of Federal credit restrictions in June. Census of population—Tasmania, 350,340 persons. Carpet factory opened at Devonport. Rosebery-Tullah road officially opened. Federal court increased basic wage \$1.20. *William Holyman*, cargo container vessel, entered Bass Strait trade. Matriculation college policy announced. Construction started for Hobart-Sydney ferry terminal. Establishment of Metropolitan Water Board. Savage River iron ore samples tested in U.S. furnaces. Legislative Council rejected equal pay legislation. Menzies government re-elected.

- 1962** 'Sputnik' dredges banned from Channel scallop beds. Power boat licensing introduced. Board of enquiry reported adversely on prospects of thermal power generation in Fingal Valley. Federal Court refused basic wage increase. Butter oil production commenced at Deloraine. Official opening of ferro-manganese plant at Bell Bay. Catagunya turbines began producing electricity. State Wages Boards granted three weeks' annual leave. Federal grant of \$2,336,000 to Tasmania to stimulate employment. Roster system introduced for 'out of hours' petrol sales. State subsidies announced for municipal fluoridation schemes. Closure of Mt Lyell Railway, Queenstown to Strahan. Wood pulp production commenced at Geeveston. West Derwent Water Scheme inaugurated; end of metropolitan water shortages.
- 1963** Speed limit in built-up areas increased from 30 to 35 mph. Abolition of State entertainments tax. Succession of Sir Charles Gairdiner. Federal court increased margins 10 per cent and granted three weeks' annual leave. New consolidated Local Government Act effective from 1 July. Trans-Derwent ferries ceased operating. Uniform marriage laws operative from 1 September. Universities Commission recommended medical school for Tasmanian University. State Government received a Federal grant of \$5,000,000 for road to Gordon River. Hydro-Electric Commission imposed power cuts on industrial consumers. *Seaway Queen*, trailer and container ship, launched. Menzies government returned with substantial majority.
- 1964** Launching of *Seaway King*. T.A.A. commenced intra-State air services. Launching of *Empress of Australia*. Poatina turbines commenced electricity generation; industrial power cuts ended. Alginate plant began operations on east coast. Labor re-elected at State elections. Federal court reduced long service leave qualifying period from 20 to 15 years. *Seaway Queen* began Melbourne-Hobart operations. Federal court increased basic wage \$2.00; rejected total wage concept. Severe flooding in Launceston area. Federal grants to private home builders made available. Tasman Bridge opened for traffic and Hobart Bridge towed away. *Seaway King* began Sydney-Hobart operations. Forestry works extended in Fingal Valley as counter to coalminers' unemployment. Increase in State parliamentary salaries. State subsidies for electric power in remote localities abolished. Hobart's water supply fluoridated. One-way street scheme introduced in Launceston. Tasmania re-established as separate Army Command. Glenorchy raised to city status. Compulsory National Service on selective basis introduced. Pickands Mather and Co. International (U.S.A.) and Mitsubishi Shoji Kaisha Ltd agreed to joint investigation of Savage River iron ore deposits.
- 1965** *Empress of Australia* sailed from Sydney on first voyage to Hobart. Provisional driving licences introduced. Contract let to raise Great Lake level by new Miena Dam. Dental nurse scheme for schools announced. Visit by Archbishop of Canterbury (Dr Ramsey). Battalion of Australian troops sent to South Vietnam. D'Entrecasteaux scallop beds closed for 1965 season. New Shops Act extended Saturday morning closing to Hobart's eastern suburbs. Commonwealth Conciliation and Arbitration Commission increased total award wage 1.5 per cent, the rise being credited to the margin, not the basic wage. Expansion of ferro-manganese plant at George Town announced. Geeveston wood pulp capacity raised to 48,000 tons. Report of Municipal Commission recommended reduction of local

government authorities from 49 to 20. Australian woolgrowers voted 'No' in referendum on Reserve Price Scheme; Tasmanians voted marginally 'Yes'.

1966 *Freya* won Sydney-Hobart race. Offshore natural gas discovered at new site in Victorian waters. Sir Robert Menzies retired and Mr Holt became Prime Minister. Decimal currency introduced on 14 February 1966. Railton cement works to expand. Hobart airport to be developed for pure jet travel. Savage River workers declared eligible for taxation zone allowance. Advanced College of Education announced for Hobart (to cost \$2m). Tamar River made navigable for large ships at night. Burnie-Launceston co-axial cable completed. Renison Bell to process tin with Capper Pass fuming method. Hobart gas works used oil after 112 years' production based on coal. Savage River agreements involving \$62m signed. Equal pay for certain females in Public Service contained in State Act. Breathalyser tests approved for use by police. Census of population—Tasmania, 371,435 persons. Workers' compensation extended to cover travel to and from work. Commonwealth Conciliation and Arbitration Commission increased basic wage by \$2. Sunday observance dispute; Victorian Q.C. appointed as board of enquiry. Shipping rates to Britain increased 6.4 per cent. Huge copper reserves discovered in Mt Lyell area. State budget lifted commercial vehicle taxation as much as 50 per cent; private vehicle taxation about 15 per cent. H.E.C. programmes accelerated. Launceston airport's new passenger terminal officially opened. Holt Liberal Government returned to power with record majority; Tasmanian representation remained 3 A.L.P., 2 Liberal. S.T.D. extended to Tasmania. Commonwealth Public Service removed marriage bar to female employment. Lake Meadowbank filled. Commonwealth Conciliation and Arbitration Commission, in interim margins case, gave increases based on total wage (ranging from 1 per cent to 2.5 per cent).

1967 Thirty-foot sloop *Cadence* won Sydney-Hobart race. Board of enquiry suggested more liberal Sunday observance legislation. Bush fire disaster of 7 February resulting in 62 deaths. First home rebuilt and occupied 18 days after its destruction. Smithton additional base for Flying Doctor Service. Chief Guide, Lady Baden-Powell, visited State. Four months to April driest in Hobart since 1840. Senate rejected Federal Government's attempt to raise postal charges. Housing grants to fire victims liberalised by Federal Government. Petition presented against a proposal to flood Lake Peddar as part of Gordon hydro-electric scheme; plan for thermal station at Bell Bay also announced. Federal Arbitration Commission abolished basic wage concept, substituted total wage concept and awarded \$1.00 increase to males and females. Israel defeated Arab nations; closure of Suez Canal trapped some Tasmanian apple shipments. Luina, new 61-home township near Waratah, finished for Mt Cleveland tin mines. State Wages Board in test case gave \$1.00 increase to males and females but retained basic wage concept. Scallop beds in D'Entrecasteaux Channel opened for one month's trial. Hydro-electric water reserves down to 16 per cent due to sustained drought in catchment areas. Cabinet decided to introduce daylight saving legislation to conserve power. Industrial power rationing with 25 per cent cuts to operate from 1 October. Federal Government to erect 50 migrant reception flats in main centres. Legislative Council consented to bill authorising Gordon River hydro-electric scheme and Bell Bay thermal

station. Liberalised Licensing Act proclaimed, lowering drinking age to 20 years, licensing restaurants and taverns, extending hours on Fridays and Saturdays, etc. Daylight saving legislation to operate from 1 October. Higher electricity charges introduced. Parliamentary Salaries Tribunal increased members' rates. Federal Trade Practices Act operational from 1 October. Change in Special Grant calculation; four State standard to operate in 1970. Savage River iron ore passed as slurry to Port Latta. U.K. devalued pound sterling by 14.3 per cent; Australia did not devalue. Senate election result in State: two Liberal, two A.L.P., one independent. Bulk electricity supplies cut 35 per cent from 1 December; domestic users to reduce consumption by 20 per cent. Legislative Council defeated price control measure. Deadlock between two Houses resulted in end of legislation controlling shop hours. Arbitration Commission gave work value award in Federal metal trades case; suggestion that increases could be absorbed where over-award payments in operation. Sixty mph driving limit introduced. Union challenge to total wage concept defeated in Full High Court. Australian Prime Minister, Mr Harold Holt, disappeared while swimming off Victorian coast.

1968 *Rainbow II*, winner on handicap, Sydney-Hobart race. Search for Mr Holt's body given up. Rainmaking experiments made over H.E.C. catchment areas. Registrar appointed, Advanced College of Education. Senator Gorton became Australian Prime Minister. Royal Hobart Hospital acquired State's first artificial kidney machine. Burnie municipal abattoir lost licence; other rural abattoirs below standard. National postal strike. Mt Lyell Company introduced superannuation scheme for wage-earners. Repulse H.E.C. dam on Lower Derwent completed. Japanese inspected ports for possible woodchip industry. New Vice-Chancellor of University (Sir George Cartland). Casino promoters put proposal before State Government. Asthma survey of schoolchildren commenced. Launceston Port Authority let tender for removal of part of Garden Island. New post, State Fire Control Officer, advertised. Bushfires in north-west and north-east. Federal Arbitration Commission in second metal trades work value decision, reduced amounts granted by 30 per cent; restoration to be considered later in year. Federal scheme announced for reconstruction of dairy industry. Mr Gorton won by-election and entered Federal House of Representatives. Savage River iron ore project officially opened. E.Z. Co. announced plans for Burnie sulphuric acid plant (1,200 tons daily capacity). Supreme Court held valid the report of the Municipal Commission. Contract let for H.E.C. Bell Bay thermal plant. Mt Cleveland tin mine, first worked in 1908, officially re-opened. Woodchip industry study indicated south suitable. St Leonards council dismissed and administrator appointed. H.E.C. water storages at record low level. Railways increased charges. Contract (\$5.6m) let for H.E.C. village at Strathgordon; part of south-west power scheme. Good rains; industrial power rationing to be relaxed to 25 per cent formula from 1 July when other restrictions would cease. Batman Bridge across lower Tamar opened. Federal Government announced subsidies for apples and pears exported to U.K. and other countries which devalued their currency in 1967. Gale damage in north-west with 110 mph winds recorded. Metropolitan Transport Trust to replace trolley-buses with motor buses for \$0.5m. Launceston General Hospital to be extended at cost of \$1.9m. Legislative Council set up select committee to examine daylight saving. Bureau of Statistics installed powerful computer for Fed-

eral and State use. Tasmanian Public Service Tribunal ruled women teachers entitled to equal pay (by 1972 in stages as prescribed in State Act). W.A. at own request ceased to be claimant State for Special Grants; Tasmania now only claimant. Stanley wharf area endangered by rock-fall from the Nut. Royal Commission reported favourably on fluoridation. Transport Commission purchased Danish ship *Birthe Andreassen* for coastal services. Mt Lyell blister copper shipped to Port Kembla (N.S.W.). H.E.C. office block for erection at cost of \$3.5m. Open road speed limit of 65 mph imposed. State receipt tax of 1 cent in each \$10 imposed (but wages and salaries exempt). Industrial power rationing to cease from 1 October. Daylight saving to operate in 1968-69 for shortened period. Arbitration Commission increased male and female adult award rates by \$1.35 per week in national wage case. Public meeting held in protest against Wrest Point casino proposal. Re-count of votes to fill vacancy created in Assembly by death of Mr John Steer, pioneer of Tasmanian daylight saving. Government Green Coach Line acquired by private operator. Federal Commissioner, Trade Practices, investigated hotel-keeper's allegation that his local supply of draught beer had been cut off because he sold Melbourne draught. H.E.C. storages, down to 14 per cent in March, up to 54 per cent in October. Traces of oil and natural gas discovered in Tasmanian part of Bass Strait. Full adult suffrage for Legislative Council elections from 1 July 1969. Stock moved from drought-stricken east coast farms. Tasmanian Pulp and Forest Holdings (woodchip exports) signed contract with Japanese paper manufacturers. Legislation passed allowing government loans to drought affected farmers. Master planning authority to be established for the Tamar Valley area. State's new governor (Sir Edric Bastyan) took up office. Woodchip company received large concession area in east and centre of State; company has until June 1971 to commence operations. Capital punishment abolished. 'Yes' vote prevailed in 'Casino Referendum'; *Wrest Point Casino Licence and Development Bill* passed by Legislative Council in late December.

- 1969 U.S. yacht *Ondine* took line honours in Sydney-Hobart yacht race; handicap winner *Koomooloo*. Tasmanian Government Railways take over Burnie railway station from Emu Bay Railway Company. Federal Minister for National Development approved east coast woodchip industry. Parangana Dam (first of the H.E.C. Mersey-Forth scheme) completed. Mt Lyell Mining and Railway Co. Ltd donated Abt railway engine to Tasmanian Transport Museum. A.N.M. commissioned new paper machine with capacity exceeding 100,000 tons of newsprint. Production from Comalco's Bell Bay aluminium plant nearing peak capacity. East Coast drought led to water shortage at St Marys. Strikes interrupted T.A.A. air services to Tasmania. State Government made \$15,000 donation to Victorian bush fire relief appeal. Officials inspect newly formed rural fire brigades. Tasmania exempted from nation wide rail strike. Commissioner of Trade Practices cited Tasmanian Breweries Pty Ltd to appear before Trade Practices Tribunal; first case under Federal *Trade Practices Act*. Casino proposal for Launceston by U.S. businessman. Senate Select Committee on Air Pollution concluded Tasmanian investigation. Longford municipality received six tanker trailers for rural fire brigades. Sir Paul Hasluck appointed Governor-General of Australia. Aberfoyle N.L. announced discovery of promising nickel deposits near Mt Lindsay. Federal Minister for Civil Aviation announced \$80,000 improvements to Hobart airport's instrument

landing system. New A.N.L. roll-on roll-off ferry *Australian Trader* to operate between Melbourne and Northern Tasmanian ports. Mr Reece set record for continuous service as State Premier. Tasmania to be excluded from container shipping service. Forestry Commission 600 ft long bridge over Arthur R. (west coast) opened. Stanley to be port for overseas export of rutile and zircon mined on King Island. Commonwealth Road Grant formula revised; State to receive increased grants. Dorset tin dredge encountered rich tin reserves at Gladstone operating site. 'Stock and Crop' census forms delivered by mail; previously by police. North-West General Hospital opened at Burnie. Site for new Launceston Regional Library chosen. Tasmanian Chief Justice warned that drivers convicted of dangerous driving could expect gaol sentences. Power Corporation (Aust.) Ltd (subsidiary of Power Corporation of Canada) took out exploration licence over 5,300 acres around Tasmania Mine at Beaconsfield. Naracoopa Rutile Ltd commissioned processing plant at Naracoopa, King Island; company to mine beach sand for rutile, zircon and other minerals. Dredging at E.Z. Co.'s Risdon wharf to deepen port facilities. Federal Government announced grant of \$750,000 for Cressy-Longford irrigation scheme conditional upon acceptance by majority of affected farmers. Roll-on roll-off ferry for Stanley and King Island planned. Prospector reported valuable mineral find in north-west near Arthur River. H.E.C. let \$0.75m contract to Tasmanian firm for supply of pipes for Fisher power station (Mersey-Forth scheme) penstock. H.E.C. reduced some rentals at Strathgordon to avoid industrial unrest. Hobart's first preservation order taken out on four houses in Battery Point. Hobart water-front strike interrupted fruit exports. Postmaster-General announced plan to bring T.V. to King Island. Tamar Regional Valley Planning Authority formed. State election results, members returned: 17 Labor 17 Liberal one Centre Party; ten sitting members lost their seats. Gordon Edgell Pty Ltd announced \$200,000 extension to Devonport food processing plant. H.E.C. let \$3m contract for Bell Bay thermal power station. Centre Party member, K. O. Lyons, combined with Liberal Party to form Liberal-Centre Party coalition government; end of 35-year Labor rule in Tasmania. Mt Lyell Co. housing project at Queenstown completed. Serious flooding in north, north-east and north-west; Longford inundated; Midland Highway cut at Ross; first serious test for Launceston flood protection project. Launceston Mayor estimated that Launceston flood protection scheme saved the city approximately \$3m. Tasmanian Trades and Labour Council put black ban on installation work connected with H.E.C. computer. Fire at Electrona carbide plant; output cut by 60 per cent. Tasmanian company awarded \$3m contract for construction of first stage of Tasmanian College of Advanced Education. Liberal-Centre Party coalition to legislate for three-year parliament; not to apply to present Parliament. Committee established by Government to study Launceston Bell Bay rail link. Production commenced at Mt Lyell Co.'s. Crown Lyell No. 3 and Cape Horn mines. Full Bench of Federal Arbitration Commission granted equal pay to females performing equal work; female salaries to be brought up to male salaries in stages. Federal Government to participate with Australian Dairy Produce Board in \$0.8m study of the dairy industry. Fruit-fly was reported on north-west coast. *Australian Trader* arrived at Devonport on maiden voyage. Work on Gordon River project officially commenced. Rockfall in Lemonthyme tunnel; Lemonthyme power station temporarily

out of commission. State Government and private enterprise to conduct survey of State's industrial potential. U.S. 'Moon Shot' to put two astronauts on the Moon launched. State and Federal Health Ministers agree to introduce legislation curbing cigarette advertising. 12.39 pm A.E.S.T. 21 July 1969, Man took first step on Moon's surface. Burnie sulphuric acid plant to use sea-water for cooling. State Government established law reform committee. Chief Secretary foreshadowed legislation to amend State Wages Board system. Public Works Department surveyed drivers using Tasman Bridge as part of plan to improve traffic flows. Hobart Marine Board let contract for geophysical and hydrographic survey of Spring Bay to Queensland company. Flooding in Midlands and North Midlands. Hobart City Council agreed to re-zone area at New Town to allow construction of \$3.5m 'K-Mart Discount' store. Seven-mile water pipeline from Mersey to A.P.P.M. paper plant at Wesley Vale completed. Cabinet vetoed proposed move of Government Printery to Warrane. Tankers carrying inflammable liquids banned from Tasman Bridge during peak traffic hours. Launceston casino backer asked for 15 years' monopoly in northern Tasmania. Cressy-Longford farmers vote in favour of Brumby Creek irrigation scheme. No action to be taken by State Government regarding proposed Marine Board Building. Ironmongers' Wages Board gives substantial increases to retail employees. Strike at Mt Lyell mine, Queenstown. University to receive \$6.9m and the College of Advanced Education \$3.98m during triennium 1970-72. Legislation proposed for long service leave for casual workers. Regulation imposing severe penalties on the users of stimulants introduced. H.E.C. to 'underground' cables in selected areas of Hobart. Research into the abalone fishery to be undertaken near Maria Island. Building contract for Wrest Point casino approved. Federal and State governments to consider port development for King Island. Federal government policy on uniform freight rates on overseas container vessels announced. Professional Fishermen's Association (Tas.) seeks the extension of territorial waters to 25 miles. Proved ore body at King Island Scheelite mine doubled to 6.0m tons. H.E.C. profit for 1968-69 exceeded \$1.8m. Launceston Teachers College officially opened. Legal action taken to prevent construction of Hobart Marine Board office building. Silver-lead prospect discovered near Zeehan. Battery Point redevelopment plan leads to criticism of Hobart City Council. by National Trust. Land speculators negotiating for large areas of land east of Hobart. Gallup Poll indicates that 61 per cent of Australians in favour of Daylight Saving. Commonwealth government to construct a 13 storey \$4m office block in Hobart. Narrow Federal election victory to Liberal-Country Party coalition; successful Tasmanian candidates: Bass, L. Barnard (A.L.P.); Braddon, R. Davies (A.L.P.); Denison, R. Solomon (Liberal); Franklin, R. Sherry (A.L.P.); Wilmot, G. Duthie (A.L.P.). Hunt for Ronald Biggs 'The Great Train Robber' spreads throughout Australia. Hobart City Council to increase building fees and to act against the owners of sub-standard flats. University of Tasmania research worker discovers link between LSD and cancer. Kidney transplant operation performed at Royal Hobart Hospital. Nation-wide strike by bank employees. Fire Prevention Week. Director of Industrial Development appointed. Trade Practices Tribunal decision challenged in High Court by Tasmanian Breweries Pty Ltd. \$317,000 extensions planned for Ogilvie High School. Softwood production target of

180m super feet per annum announced by Forestry Commission for the Fingal Valley plantations. Gordon River power station diversion tunnel completed. State Premiers and the Prime Minister meet to discuss the imposition of receipt taxes. Serious flooding in North-East Tasmania. Stricter penalties for drunken driving introduced. Severe frost damage to Huon apple crop; some unemployment anticipated. Hobart City Council off-street car-parks suffered a trading loss of \$89,000 during 1968-69. King Island Scheelite Company Ltd to mine behind an artificial sea-wall; first time attempted in Australia. Summer school course in geology held at the University of Tasmania. Maritime strike disrupts shipping services to Tasmania. 1969 National Wage Case: minimum wage increase \$3.50, all other wages increased by 3 per cent. Tasmanian greasy wool production of 46.96m lb (1968-69), a record. First Red Cross road-side first-aid station opened at Oatlands. National Theatre and Fine Arts Society to receive a Federal government grant of \$27,000. Legislative Council Select Committee to investigate the effect of the introduction of water meters. Second Select Committee enquiry into the Burnie Expressway announced. Degree course in Pharmacy to commence in 1971. Feasibility study of the proposed Launceston to Bell Bay rail-link undertaken. Labor Opposition in House of Assembly refused to grant 'pairs' to Government members. Southern Outlet road from Hobart to Kingston opened. Copper smelter at Mt Lyell closed; concentrate to be sent to Japan and Port Pirie (S.A.) for treatment. Tasmanian Girls Choir chosen to represent Australia in an international radio competition—'Let the People Sing'. Launceston City Council purchases the Princess Theatre.

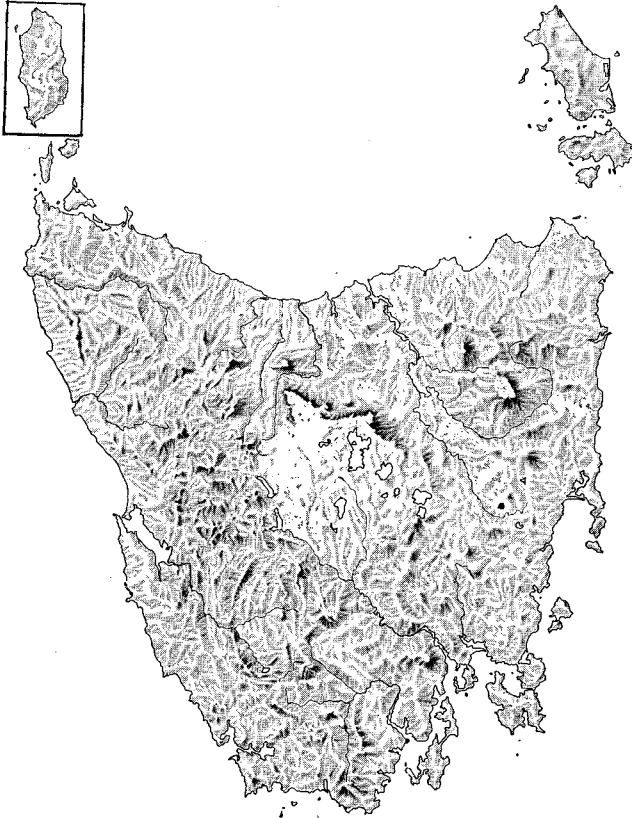
Chapter 2

PHYSICAL ENVIRONMENT

GENERAL DESCRIPTION

Location and Area

The State of Tasmania is a group of islands lying south of the south-east corner of the Australian continent; the major island is called Tasmania and the more important of the lesser islands include King, Flinders and Bruny. Tasmania, roughly heartshaped with the greatest breadth in the north, extends from $40^{\circ} 38'$ to $43^{\circ} 39'$ South latitude and from $144^{\circ} 36'$ to $148^{\circ} 23'$ East longitude. All the coastline lies in the Southern Ocean except in the north where Bass Strait separates the island from the Australian continent by approximately 150 miles.



Relief Map

The area of the whole State, including the lesser islands, is 26,383 square miles or about 0.9 per cent of the area of the Australian Commonwealth (2,967,909 sq. miles); it is just under one-third the size of Victoria, the smallest continental State.

Australia, extending as it does well north of the Tropic of Capricorn and with much of its area in the zone of the sub-tropical anti-cyclones, is basically a warm, dry continent. Tasmania is in the temperate zone and practically the whole island is well watered with no marked seasonal concentration; there are no deserts or drought areas as found extensively on the adjacent continent. Because Tasmania is the most southern State of the Commonwealth, there is a tendency to think of it as being close to the Antarctic but its latitude is matched, in the northern hemisphere, by that of Marseilles (France), and Boston (U.S.A.). In addition, the fact that Tasmania is an island shelters it from the extremes of heat and cold experienced in these two centres. The effect of its insular position is illustrated by the variation between summer and winter mean temperatures in coastal towns—this rarely exceeds 15°F. Comparing Hobart (Tasmania) with Melbourne (Victoria), mean maxima are some 6° warmer and mean minima 3° warmer in the Victorian capital although Hobart enjoys slightly more sunlight as it is subject to less fog.

Apart from the Great Dividing Range in the east, Australia is predominantly a land of low plateaux and plains with little relief. By way of contrast, Tasmania could legitimately be called the island of mountains, since it has the largest proportion of high country in its total area when compared with the other States. The distinctive feature of the island is not so much the size of the mountains—few exceed 5,000 feet—but rather the frequency with which they occur. The British Admiralty Pilot Book describes Tasmania as 'probably the most thoroughly mountainous island on the globe.'

Population Distribution

With a population of about 391,000, Tasmania is still thinly populated although its density of 15 persons per square mile is exceeded only by Victoria among the Australian States. Asian comparisons are Japan, 708 persons per square mile; China, 210; Indonesia, 196.

A marked characteristic of the continental States of the Commonwealth is the very high concentration of population in their respective metropolitan areas, Brisbane providing the only example where this concentration falls below 50 per cent of the State's total population. In contrast, the Tasmanian population is concentrated in two main areas: (i) Urban Hobart, with about 32 per cent; and (ii) Urban Launceston with about 16 per cent. This deviation from an Australian pattern is partly explained by the relative proximity of Launceston to the principal mainland markets, a factor also operating in favour of the north-western urban centres of Burnie-Somerset and Devonport which together now contain a further 9 per cent of the State's population. As might be expected with an island, the main centres of population have grown up around ports.

Economic Development

In the nineteenth century, the basic economic activities were farming, mining, forestry and fishing (with whaling of prime importance in the first half of the century). In the twentieth century, evolution of secondary industry was at first inhibited by two major factors—the smallness of the local island market and the relative advantage enjoyed by competitors located closer to the principal markets. There were, however, two geographical features of the

island which could be utilised to offset these disadvantages, namely a mountainous terrain and an assured rainfall. Taken together, these two factors mean cheap electric power (if the necessary investment is made in dams and generating stations), for it has been estimated that Tasmania has at least 50 per cent of the total Australian hydro-electric potential. In the last three decades, the State Hydro-Electric Commission has developed a generating system such that the turbines now in use generate 1.27 million kilowatts, and work is still proceeding on harnessing fresh sources. Development of the Gordon River power potential is in an advanced stage of planning. With the completion of this scheme in 1975, total generating capacity will be increased to almost 1.6 million kilowatts. The abundance of cheap electric power has led to the establishment of a number of major industrial plants and has transformed the island's economy, which was once heavily dependent on primary industry. Evidence of this change is given by the Census of 30 June 1966 when 11.69 per cent of the Tasmanian labour force was shown as engaged in 'Primary Production' but 23.05 per cent in 'Manufacturing'. Compared purely on the basis of these two percentages, Tasmania is, relatively speaking, a more industrialised State than Queensland or Western Australia.

An island, by definition, can suffer from isolation and there is little doubt that Tasmania has been handicapped by transport difficulties. Two developments are now operating to minimise the effects of isolation—regular and frequent air services and roll-on roll-off ferries. The pure-jet air service puts a Tasmanian traveller down in Melbourne in one hour's flying time or less from Hobart, while cargoes are air-freighted daily. Roll-on roll-off vehicular ferries are playing the part of a bridge and are carrying tourist cars and loaded road freighters interstate; the main terminal is Melbourne but a similar direct Sydney link also operates.

Origin of Population

Apart from natural increase, the chief source of the island's population has been the British Isles. At the Census of 30 June 1966, 96 per cent of the people in the State were recorded as having been born in Tasmania, other parts of Australia, the British Isles and New Zealand. The other main countries of birth were the Netherlands, Germany, Poland, Italy, Yugoslavia and Greece, in that order. The Census also showed 71,000 persons with a Tasmanian birthplace on the Australian mainland, but only 33,000 persons with a mainland birthplace in Tasmania; the long-term tendency has been for the migration of Tasmanians to the mainland to exceed the migration of 'mainlanders' to Tasmania.

PHYSIOGRAPHY

Introduction

Tasmania is an island of mountains and is unique among Australian States in being predominantly influenced by polar maritime air masses. From the point of view of settlement and development, these two factors have combined to create assets against which must be weighed certain liabilities. The island, a mere 180 miles from north to south and 190 miles from east to west, has a wide variety of mountains, plateaux and plains, of rivers, lakes and tarns, of forest, moorland and grassland, of towns, farms and uninhabited, and virtually unexplored country. The temperate maritime climate partly explains Tasmania being called the most English of all States but other factors operate to heighten the comparison—the pattern of agricultural settlement with orchards, hedges and hopfields; the Lake Country; the early freestone architec-

ture still common in the east; the roads and villages dotted with oaks, elms and poplars. Here, then, is something new for the visitor to see and all the natural assets for a flourishing tourist industry have been amply provided. Assured rainfall and mountain storages have also given birth to massive development of hydro-electric power and, indirectly, to industry. The growth of forests, too, is promoted by suitable factors of rainfall and temperature, and this forms the basis for industries such as timber-milling and newsprint and other paper production.

The mountainous nature of the island is confirmed by survey which shows six features exceeding 5,000 feet, 28 exceeding 4,000 feet and a further 28 exceeding 3,000 feet. The highest mountain is Mt Ossa (5,305 feet) some ten miles north-west of Lake St Clair, and north-west again from this peak lie Mt Pelion West (5,100 feet), Barn Bluff (5,114 feet) and Cradle Mountain (5,069 feet); the furthest distance, 15 miles, is from Mt Ossa to Cradle Mountain. In the Ben Lomond area, the principal features are Legges Tor (5,160 feet) and about six miles south, Stacks Bluff (5,010 feet). Each of these mountainous regions and a number of others have been set aside as National Parks, two of which, Ben Lomond and Mt Field, are renowned for winter sport.

Water Resources and Rainfall

Fresh water navigation has played very little part in the island's development, the rivers being too fast-running, shallow or short. Of the four major ports, three are located on tidal estuaries—Hobart on the Derwent; Launceston on the Tamar; Devonport on the Mersey (Burnie has built a port on the open sea protected by breakwaters). Rivers, however, are significant in the Tasmanian scene for three reasons: (i) use of headwaters for electricity generation; (ii) domestic and industrial water supply; (iii) irrigation—although there are no major schemes fully operational, the government is progressing well with a scheme in the Cressy-Longford area south of Launceston. Hobart for example draws much of its water supply direct from the upper Derwent River without use of a dam and the flow is adequate to serve a population at least ten times greater than that at present. The development of hydro-electric power has been based on full utilisation of the sources and tributaries of the Derwent, with a chain of power houses stretching from Poatina on the Great Lake to Meadowbank only 32 miles from Hobart. At Launceston, too, the waters of the South Esk have been harnessed at Trevallyn. This does not exhaust the possibility of future development as work on the giant Gordon-Serpentine System (south-west) is proceeding and preliminary assessments of the undoubted possibilities of the Franklin, King and Pieman Rivers (West Coast) are being undertaken. The Mersey-Forth Scheme (north-west), commenced in 1963, is substantially advanced with most stations operating and the whole scheme scheduled for completion by 1971.

The exceptional drought experienced in some areas from 1967 until early 1969 does not invalidate the general truth of previous statements about assured rainfall.

However, to obtain a true perspective, it should be appreciated that large areas of the State cannot be cultivated because there is too much rainfall (in contrast with the mainland of Australia where often the reverse situation applies). Further, the mountainous terrain and accompanying highland climate have restricted farming to relatively small areas of suitable country, mainly river valleys, coastal plains and the lower plateaux. In 1968-69, farm statistics showed that 39 per cent of the State's area was occupied by rural holdings. Only 4.1 per cent of the area of rural holdings was under crop and

a further 29.3 per cent under clover and grasses (other than native). The remaining 66.6 per cent of rural holdings included bush runs, uncleared scrub or possibly land unsuitable for any rural purpose at all. A high proportion of the State's area not included in rural holdings is composed of forests, national parks and lakes.

Population Centres

The distribution of the State's population is largely influenced by factors of terrain and climate. A convenient way to summarise the present pattern of settlement is to imagine three circles of 25 mile radius centred on Hobart (representing the south-east), Launceston (the north) and Ulverstone (the north-west): (i) with Hobart as centre, 42 per cent of the Tasmanian population is located within the 25 mile circle; (ii) with Launceston as centre, 21 per cent; (iii) with Ulverstone, 18 per cent. Since all circles are exclusive of each other, these three defined areas will together contain more than 81 per cent of the State's population and this fact justifies the generalisation that the main settlement is in the south-east, the north and the north-west. Residual population not included in the three defined areas is mainly located in the more distant north-west and north-east, in the midlands between Hobart and Launceston, on King and Flinders Islands and along the east coast. Even a 50-mile circle with Queenstown as centre includes only three per cent of the State's population and here the activity is mining, not farming, since this is predominantly an area of high mountains and heavy rainfall. The south-west is completely uninhabited and the central plateau, where the main activities are summer grazing and hydro-electric power generation, is very sparsely populated.

Physiographic Regions

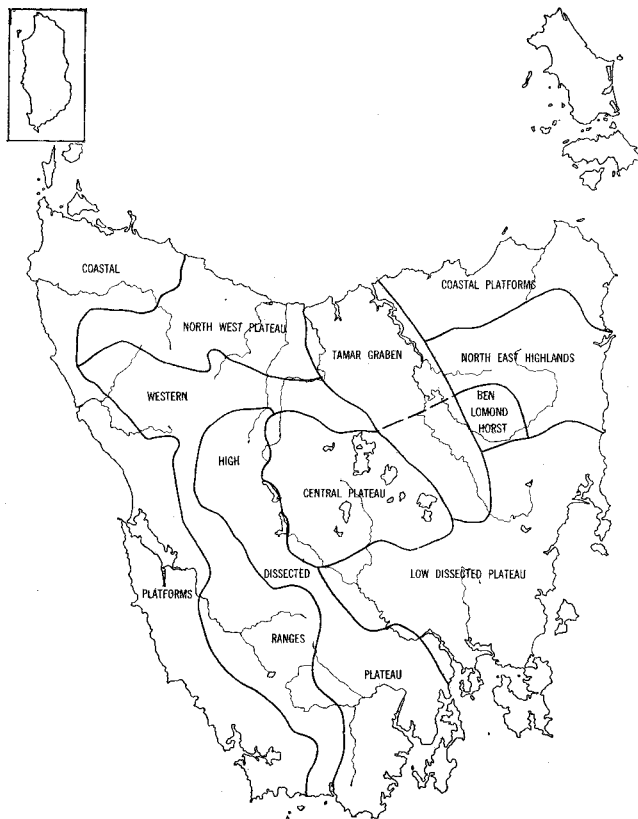
To explain this particular pattern of settlement, it is necessary to isolate the various physiographic regions of the State as follows:

Central Plateau: The main feature is a relatively undissected, dolerite-capped plateau sloping generally south-eastward from an average level of 3,500 feet in the north to 2,000 feet in the south, and drained almost wholly by the Derwent system (although recent hydro-electric development has involved diversion of some waters to the north at Poatina). The northern and eastern boundaries of the Plateau are the Great Western Tiers (paradoxically named since they lie in the central north of the island). This is known as the Lake Country of the island and is the chief source of the State's hydro-electric power.

High Dissected Plateau: West of Lake St Clair, the dolerite caps steeply-tilted sediments and the plateau is much dissected; it is formed of a series of peaks and broken ridges. The coastlands in the extreme south of the region are rugged but in the D'Entrecasteaux Channel and Huon River areas, narrow coastal belts have been devoted to specialised agriculture.

Western Ranges: The high dissected plateau is bounded by a mountainous series of ranges running parallel to the west coast and in this region are located the principal mines of the State. The south of the region is completely uninhabited except for construction workers on the Gordon power scheme.

Western Coastal Platforms: Throughout almost the entire length of the West Coast, an uplifted and much dissected peneplain slopes westward from about 900 feet to end abruptly in cliffs more than 100 feet high. In the south of this region, superhumid button grass plains predominate, and the area is uninhabited. On the coastal plain south of the Arthur River, however,



Physiographic Regions (after J.L.Davies)

(The above regions derive from a classification by J. L. Davies, M.A., Ph.D., University of Tasmania).

dairy cattle are wintered on agistment runs while north of the river dairying begins to appear and swamps formed by recent emergence have been cleared for farming.

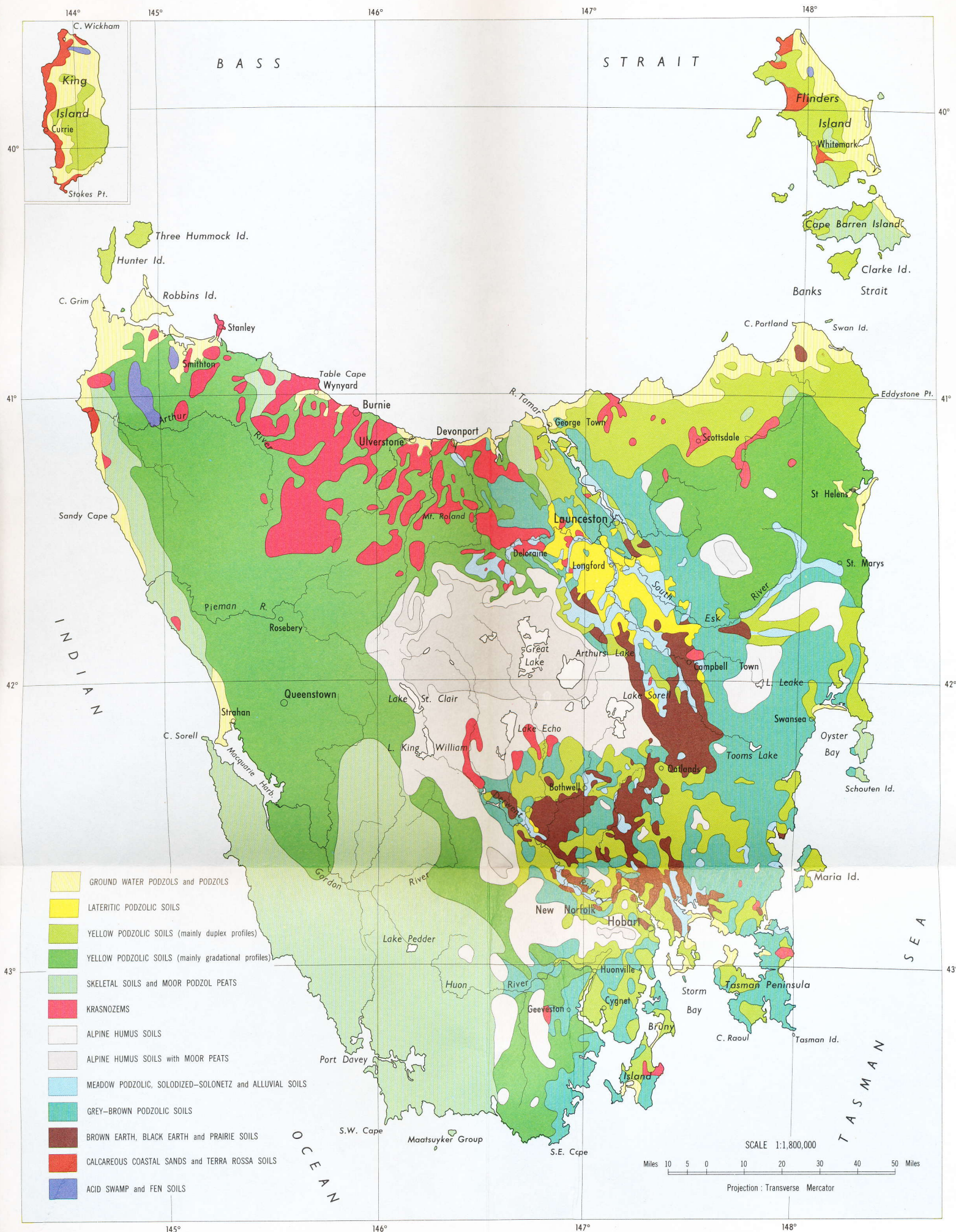
North-West Plateau: North of the Western Ranges lies a plateau averaging nearly 2,000 feet and important mainly for forestry; the coastlands derive mainly from basalt, giving rise to intensive mixed farming based on dairying, potatoes and crops for canning and freezing, such as peas and beans.

Tamar Graben: This graben (rift valley) is the largest plain and the leading agricultural and pastoral district in the State; it ends in the drowned inlets of the Tamar and Mersey estuaries and Port Sorell in the north.

North-East Coastal Platforms: This region consists of undulating lowland but the soils are acid and the land is used only for grazing.

North-East Highlands and Ben Lomond Horst: This region comprises mostly uplifted remnants of old fold mountains dominated by the 5,000 foot dolerite-capped plateau horst of Ben Lomond, an outlier of the Central Plateau. Here agriculture is largely confined to small basalt-derived basins, and some minerals are worked.

SOILS



Low Dissected Plateau: In the south-east lies a low dissected dolerite plateau averaging perhaps 1,200 feet and used mainly for grazing. The northern coastlands of this region are narrow and also devoted to sheep, but the southern coastland is important for its specialised agriculture. At the extreme south of the region is the drowned estuary of the Derwent, and the Tasman and Forestier Peninsulas.

SOILS

The following article was contributed by K. D. Nicolls, Regional Soils Officer, and G. M. Dimmock, C.S.I.R.O. Division of Soils, Hobart.

Introduction

Nearly all Tasmanian soils are moderately to strongly leached, because of the generally humid climate. Most are acid, at least in the surface horizons, some very strongly so. Podzolic soils of various kinds are the most extensive, while on basalt in the north of the State, the strongly leached krasnozems are widespread. Moderately leached soils are almost restricted to basic igneous rocks, in the relatively dry valleys of the centre and south-east; in some of these small amounts of free carbonate produced in rock weathering remain in the deeper horizons. Elsewhere, low to moderate leaching is associated with youth of the parent materials, as in the calcareous coastal sands, but this is only in restricted localities.

In keeping with relatively high rainfall and low temperature, Tasmanian soils tend to be high in organic matter. In a survey of 264 samples of various soils throughout the State, the median value for organic matter in the surface four inches was close to nine per cent.

Restricted drainage, in association with button grass, *Mesomelaena sphaerocephalus*, produces moor podzol peats at low elevations on the valley floors of the southwest. Together with low temperature on the Central and smaller plateaux, it is responsible for the development of the moor peats. Restricted drainage also accounts for the acid swamp soils and fen soils in the north-west and on King and Flinders Islands, and for the organic soils occupying narrow strips of alluvium along the flood plains of rivers in the eastern half of the State. Nevertheless, Tasmanian peats are usually shallow. The depth of soil with organic matter content exceeding 20 per cent is usually no more than 12 inches, and peats more than 24 inches deep are rare.

Within any one climatic zone the pattern of parent material largely determines the distribution of soils, the soil boundaries closely following rock boundaries. This is so particularly with the basic igneous rocks, basalt and dolerite, the soils of which are distinct from those on more siliceous parent materials. Consequently where soil surveys have not been made, the geological map is the best indicator of the likely soil pattern.

Examples of the influence of age of the soil surface upon soil development may be seen in river terraces and in successive drifts of windblown sand along some parts of west-facing coastlines. In the Midlands Graben the highest (oldest) river terraces have lateritic podzolic soils, lower terraces have meadow podzolic and solodized-solonetz soils and the present flood plains have organic alluvial soils. On the coastal sand drifts, the oldest surfaces farthest inland have strongly leached groundwater podzols and podzols, the intermediate dunes have less leached terra rossa soils, and the young drifts near the beaches have the slightly leached calcareous coastal sands.

Fertility

Like other Australian soils, by world standards Tasmanian soils are not fertile. But on the average, Tasmania is well watered, and its soils can be made highly productive if adequately fertilised. The need for nitrogen has been met mainly by growing legumes, but there is an increasing place for nitrogen fertilisers with special crops and high producing pastures such as those used in dairying. Though in areas of intensive farming, superphosphate has been in continuous use for at least three to four decades, phosphorus is still generally required. The majority of agricultural soils in Tasmania apparently have low reserves of usable potassium, and as greater demands are put upon them, the need for applied potassium will increase. Already lack of potassium limits pasture production on sandy soils and those exploited by long cropping, particularly the lateritic podzolic soils and some of the meadow podzolics. Molybdenum is the most widely required of the trace elements, especially on the lateritic podzolic soils, the krasnozems, and many of the yellow podzolics. Copper is commonly required on the groundwater podzols, podzols and calcareous coastal sands, for stock health as well as for pasture production. Soils of these last three groups, together with some krasnozems and yellow podzolic soils, commonly fail to supply enough cobalt to stock grazing on them, and cobalt supplementation by pasture topdressing or by other means is necessary.

The Soil Map

In the accompanying map the twelve mapping units are based upon the Great Soil Group Classification of Stephens (1962). Though his descriptions are not always fully applicable to these particular soils, the existing names have been used in preference to introducing new ones. At this scale, of necessity the map is very generalised and only the dominant soils of any area can be shown. The map is complementary to that in the *Atlas of Australian Soils* (Northcote 1962) using a different system of soil classification though many of the soil boundaries coincide. The concept of duplex and gradational texture profiles introduced by Northcote (1960) is used here to subdivide the yellow podzolic soils.

Little more than one-fifth of Tasmania has been covered in soil surveys. Boundaries drawn in areas not covered by soil surveys are interpreted mainly from maps of geology and topography and to some extent from aerial photographs. The geological map itself varies in reliability depending upon the extent of surveys, and the soil map is to be interpreted accordingly. In the western third of the State, with very limited access except to parts of the coast, the soil classification rests upon infrequent observations and interpretation of geology, and few soil boundaries can be drawn. The relative complexity of the soil map in the Derwent Valley and northern Midlands arises largely from greater knowledge of the soils there. However, the complex pattern of sedimentary rocks, dolerite, basalt and alluvium, in a relatively dry environment is also a factor.

(1) *Groundwater Podzols and Podzols*

These are typical of coarse textured marine and aeolian deposits in coastal areas. They are strongly leached and strongly acid, the A¹ horizon consisting essentially of siliceous sand and organic matter. The A² horizon is markedly bleached and usually from one to four feet thick, but occasionally more than 12 feet. The brown to black B horizon, in which organic matter and to some extent iron has accumulated, contributes to the restriction of drainage in the groundwater podzols, which are characteristically wet in winter. The podzols occupy the better drained sites, often the tops and sides of dunes.

The heath or sparse scrub natural vegetation of these soils can be cheaply cleared and appreciable areas have been sown to pasture.

(2) *Lateritic Podzolic Soils*

The main locality of these soils is the Midlands Graben, where they fall into two groups, having either sandy or loamy A horizons. Both are slightly to strongly acid. The former occupy the almost flat remnants of old erosion surfaces and high river terraces. The sandy A horizons, containing large amounts of ironstone gravel, rest sharply on deep, brightly coloured and strongly weathered kaolinitic clay. These sandy lateritic podzolics were formerly left to rough grazing, but recently have been much developed with sown pastures.

The lateritic podzolics with clay loam or loam A horizons have developed on truncated portions of the old erosion surface. The A horizons are shallow and the A² weakly developed. The clay B and C horizons resemble those of the first group. These soils were settled early for cropping, mainly with cereals. Since the discovery and correction of molybdenum deficiency, they have been used intensively for pastures.

(3) *Yellow Podzolic Soils*

Throughout the State, yellow podzolic soils form on those siliceous rocks yielding sufficient clay on weathering. The unit is more extensive and more diverse than others. In the south-east podzols accompany the yellow podzolics on sandstone, and in the west and north-west, where access is limited, podzols, skeletal soils, moor podzol peats and probably some krasnozems are included.

The yellow podzolics have greyish A horizons and yellowish often mottled B horizons, with strongly acid reaction throughout. An A² is usually present and may be strongly bleached. The depth to weathering rock varies from one to several feet. They may have either duplex (Unit 3a) or gradational (Unit 3b) profiles. The former, with an abrupt change of texture from the sandy or silty A horizons to the clay B, are typical of the drier regions, and the gradational of the wetter.

The gradational yellow podzolics support much heavy timber. The duplex soils have largely remained uncleared of their sclerophyll forest but their use for sown pastures is extending. Many apple orchards are on duplex yellow podzolics. Both groups have been used for pine plantations.

(4) *Skeletal Soils and Moor Podzol Peats*

Soils of this unit and of Unit 3b occur in association throughout the western third of the State. The Unit 4 soils dominate in the south and the 3b soils in the north. The skeletal soils in Tasmania are characteristic of steep slopes on the more siliceous rocks, where weathered material is quickly removed by erosion. Quartzites in the north and west, and granite in the north-east, are the main parent materials. The soils are shallow and sandy with abundant rock fragments and varying accumulation of organic matter, and are strongly acid, leached and infertile. They are interspersed with frequent exposures of bare rock. In the western third of the State, the skeletal soils are accompanied by the moor podzol peats on valley plains and lower slopes. With restricted drainage, organic matter accumulates to form shallow very strongly acid peats, overlying grey less-organic sandy A horizons and a darker organic B horizon. Often this rests on clay.

Areas of Unit 4 have little potential for agriculture or forestry, functioning mainly as reserves and water catchments.

(5) *Krasnozems*

In Tasmania krasnozems are characteristic of the basic igneous rocks under high rainfall, particularly in the north-west. Apart from small areas of lateritic krasnozems in drier places, as at Campbell Town, thought to relate to past weather conditions, their lower limit mean annual rainfall is about 30 inches for basalt and 40 inches for dolerite. Krasnozems on dolerite probably extend further in inaccessible country than the map indicates.

Krasnozems are deep, well drained, friable clay soils, with little differentiation of the profile into horizons. They are moderately to strongly acid, relatively high in organic matter, and strongly coloured red or brown by finely divided oxides of iron. Those nearer the coast are usually the reddest. With elevation and rainfall increasing and temperature decreasing inland, the red colour gives way to brown, and soil acidity increases.

As elsewhere in Australia, krasnozems have a high agricultural reputation though chemically they are not highly fertile. Most krasnozem areas are used for dairying and for crops such as potatoes and peas but some at high elevation in the north-west still carry their natural rain or wet sclerophyll forest. Some, particularly at higher elevation, are used for pine plantations.

(6) *Alpine Humus Soils*

In Tasmania these soils are associated specifically with periglacial solifluction deposits, hence the name 'yellow-brown soils on solifluction deposits' given to them in past soil survey reports of the C.S.I.R.O. Division of Soils. The solifluction mantle almost completely covers dolerite mountains in the centre, east and south-east. There the critical elevation for the initiation of solifluction seems to have been about 2,000 feet; lower summits do not have these deposits. The mantle and its associated soils, however, often descend well below 2,000 feet where slopes above provide a sufficient source for it. The deposits consist of boulders and fragments, largely or wholly of dolerite, in an earthy matrix which is usually coloured strong brown. Its texture varies with the source from sand to clay, but within any profile changes little with depth.

Soil profiles vary mainly with drainage. On free-draining sites under low rainfall, profile formation is often limited to incorporation of organic matter in the surface foot or more. In wetter locations organic matter increases and the profile tends towards moor peat. Some iron leaches from the upper mineral horizons leaving them paler coloured, and thin iron pans form below. All soils are moderately to strongly acid.

Steep slopes, stoniness and low temperature together almost preclude agricultural use, but at moderate elevations these soils support valuable eucalypt forests.

(7) *Alpine Humus Soils with Moor Peats*

The plateau tops have mostly the soils of Unit 6, but with moor peats in marshy situations. The peats are commonly 15 to 20 and rarely up to 30 inches deep. These areas serve mainly as water catchments and reserves, but some summer grazing is done on the Central Plateau.

(8) *Meadow Podzolic Soils, Solodized-solonetz and Alluvial Soils*

Soils of this unit occupy strips of alluvium along water-courses throughout the drier eastern half of the State, but only the wider strips in the larger valleys can be shown at the scale of the soil map.

The alluvial soils occupy the younger alluvial deposits, mostly on current flood plains. They are usually dark coloured due to the accumulation of organic matter but beyond this surface accumulation, and mottling of the horizons below, they show little profile development. The alluvium, often stratified, varies in texture from gravelly sand to clay. The alluvial soils are commonly slightly acid at the surface and alkaline below; a few are saline.

The meadow podzolic soils and solodized-solonetz are older soils with strong profile development, occupying river terraces. They are duplex soils, with usually sandy loam A horizons, and greyish or yellowish mottled heavy clay B horizons. A horizons are pale coloured, often strongly bleached. Reaction of the A horizon is acid, and the B and C horizons may be acid or alkaline. Particularly in summer, groundwaters may be somewhat saline.

Soils of this unit have been used fairly intensively for a variety of agricultural and horticultural crops as well as for pastures. The risk of damage by floods limits cropping on some of the alluvial soils, but others are highly productive.

(9) *Grey-brown Podzolic Soils*

For the purposes of this map Unit 9 has been restricted to dolerite as the parent material. The grey-brown podzolics are characteristic of dolerite below about 2,000 feet elevation in the zone of mean annual rainfall 25 to 40 inches.

The profile is duplex, usually with a grey to grey-brown fine sandy loam A horizon and a dark yellowish-brown or olive-brown clay B horizon, passing gradually into weathering dolerite at depths of two to three feet. The A² may be only incipient or may be strongly bleached, and often contains large amounts of hard round ferruginous concretions. Reaction is moderately acid at the surface, but neutral to alkaline in the C horizon, where there are occasionally traces of free carbonate. Boulders and stones of dolerite of all sizes occur throughout the profile. This and the usually steep slopes limit the agricultural use of these soils, a large proportion of their area remaining uncleared of its sclerophyll forest and some carrying millable timber. The existing development of some lower slopes with sown pastures could be extended.

(10) *Brown Earths, Black Earths and Prairie Soils*

These are characteristic of basalt and dolerite in the relatively dry valleys of the midlands and south-east, with mean annual rainfall less than 25 inches. Some brown soils on feldspathic and micaceous sandstones, and also on alluvium in the driest parts are included, but even here the more siliceous rocks yield the yellow podzolic soils of Unit 3a. The brown and black soils are generally slightly acid to neutral at the surface, and neutral to alkaline below. Free carbonate sometimes in appreciable amount remains in the black earths, but has been lost from the prairie soils and from most brown earths.

The brown earths on dolerite are much the most extensive. They are duplex, with loamy A¹ horizons and reddish-brown clay B horizons, and weathering rock usually within two feet of the surface. Mostly they are stony, on steep slopes, dry in summer and used for rough grazing, but the use of sown pastures as on some lower slopes could be extended. Black earths on dolerite are prominent only around Hobart.

The prairie soils are mostly on small but widely distributed patches of basalt, often in a complex with brown and black earths. The basalt terrain is usually less steep than the dolerite and soils are often arable though stony. Around Sorell the black soils were exploited early for cereal growing and have been farmed intensively since.

(11) *Calcareous Coastal Sands and Terra Rossa Soils*

Though small in area, these soils are conspicuous, and so have been separated on the map from the adjoining groundwater podzols and podzols. They belong to systems of dunes of sand and shell fragments, blown inland from west-facing beaches, particularly on King and Flinders Islands. The greyish or light yellowish calcareous coastal sands, with alkaline reaction throughout and little development of a soil profile beyond surface accumulation of organic matter and slight leaching of the shell fragments, occupy the younger dunes nearer the coast. The terra rossa soils, on older dunes further inland, have reddish-brown A and B horizons, slightly acid except around remaining pockets of carbonate.

These soils were early used for rough grazing but were prone to coast disease of stock caused by lack of cobalt and copper. Some now carry sown pastures.

(12) *Acid Swamp Soils and Fen Soils*

Highly organic soils are found at low elevation in several areas of former swamp, mainly in the northwest and on King and Flinders Islands. Montagu Swamp, the largest of these, has strongly acid soils in contrast to the nearby Mowbray Swamp, part of which has the alkaline fen soils. With artificial drainage these organic soils can be made highly productive, usually with pastures for dairying.

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DESCRIPTION OF STATISTICAL DIVISIONS

Introduction

Earlier the State of Tasmania was briefly described by analysing its terrain into nine physiographic regions. For statistical purposes, the State is analysed in divisions but these do not necessarily coincide with physiographic regions and have been evolved empirically, mainly on the basis of affinity of type of rural production or identity of economic interest. For obvious reasons of convenience and simplicity, statistical divisions are built generally from *whole* municipalities and this fact alone will largely explain the divergence of the statistical divisions from the physiographic regions. Two examples will suffice: (i) Esperance Municipality is included in the Southern Division; only the eastern coastlands of the municipality are settled, the balance lying in the uninhabited south and south-west of the island; thus, due to the relatively large area of Esperance Municipality, the Southern Division not only includes the hop and fruit growing areas of the Derwent, Huon and Channel districts but also Port Davey and Lake Pedder in the remote west; (ii) Deloraine Municipality extends into at least three physiographic regions: the Tamar Graben, the Western Ranges and the Central Plateau. For statistical purposes, it is grouped with other municipalities in the North Western Division.

Statistical Divisions

In subsequent chapters, data for the State will frequently be given in terms of statistical divisions and the following briefly describes each (with population estimated for 30 June 1969):

(1) *Hobart Division*: On the Derwent Estuary, the cities of Hobart and Glenorchy, the Clarence Municipality and *portions* of the municipalities of Kingborough, New Norfolk, Brighton and Sorell form this division. It is contained in the approximate quadrilateral New Norfolk—Pontville—Carlton River mouth—Snug, the boundaries having been drawn to encompass all future urban extensions of the main inner area over a period of 20 or 30 years. The division contains the State capital and a number of large industrial undertakings, with a major port located at Hobart. (Population, 147,830.)

'Urban Hobart' lies at the centre of the Hobart Division, of which it forms part; it comprises the *densely settled contiguous parts* of the cities of Hobart and Glenorchy, and of the municipalities of Clarence and Kingborough. (Population, 124,880.) The boundaries of urban Hobart and the Hobart Division do not conform with borders defining local government areas. (The details of these boundaries are given in Chapter 5, 'Demography', under 'Population Centred on Hobart'.)

(2) *North Central Division*: The City of Launceston on the Tamar Estuary is ringed by five municipalities, which, in addition to suburban elements, have large tracts of rural land; accordingly the City of Launceston is treated as a division in its own right. (Population, 36,700.)

'Urban Launceston' is an area corresponding, in concept, with Urban Hobart and comprises the City of Launceston and the *suburban* portions of the bordering municipalities of Beaconsfield, St Leonards, Lilydale, Westbury and Evandale. (Population, 62,390.)

(3) *North Western Division*: The constituent municipalities are King Island, Circular Head, Wynyard, Burnie, Penguin, Ulverstone, Kentish, Devonport, Latrobe and Deloraine. In general, the division extends north from the Pieman River mouth in the west, then along Bass Strait to the east of Port Sorell. Rainfall in the division is generous—from forty to fifty inches near the shore-line to sixty or seventy inches on the higher country inland. The area is cut into sections by rivers discharging into Bass Strait, the chief being the Mersey, Forth, Leven, Blythe, Cam, Inglis, Black, Duck, and Montagu.

It has large tracts of fertile soil which, together with good rainfall and a mild climate, account for relatively dense settlement and an ascendancy in dairying, beef-cattle farming, potato growing and production of crops for canning and quick-freezing (e.g. green peas and french beans). The division is making extensive use of its timber resources, not only for sawmilling but for large undertakings producing fine writing and printing paper, parchment and other special papers, and hardboard.

The two main ports of the division are Burnie and Devonport, the latter being the main terminal for a roll-on/roll-off ferry service to Melbourne; urban development has not been confined to these two centres, however, and the coast road along Bass Strait runs through a number of townships serving the rural hinterland.

Until 1963, the north-west coast was isolated from the central west coast, the only direct link being the Emu Bay Railway; the Murchison Highway now connects the two areas and makes the coastal road along Bass Strait part of the 'round the State' route. (Population, 92,350.)

(4) *North Eastern Division*: The constituent municipalities are Beaconsfield, George Town, Lilydale, Scottsdale, Ringarooma, Portland, Fingal and Flinders. In general, the division extends from east of Port Sorell along Bass Strait, then south along the Tasman Sea as far as the Denison River.

In terms of terrain, the division exhibits wide variety, including as it does the Tamar Estuary, the north-east coastal plains and the north-east highlands. In the Tamar Valley from Trevallyn to the sea, the average rainfall is about 30 inches; elsewhere it varies from 30 inches on the coastal plains to 60 inches on some of the highlands. The rivers in the division, apart from the Tamar and South Esk, are mostly small; the Piper, Brid, Big Forester, Little Forester and Ringarooma flow into Bass Strait while the Mussel Roe, Anson, George and Scamander flow into the Tasman Sea.

Along the Tamar Estuary, the main activities are orcharding and metallurgical refining; elsewhere the principal industries are farming, dairying, grazing, tin and coal mining and sawmilling.

The main ports for the division are those on the Tamar Estuary, including Launceston, Beauty Point and Bell Bay, the last being the outlet for metallurgical refinery products, including aluminium, from plants at George Town. In considering the population of the division it should be taken into account that approximately 28 per cent is located in *suburban* portions of Beaconsfield and Lilydale municipalities adjacent to Launceston. (Population, 37,550.)

(5) *North Midland Division*: The constituent municipalities are St Leonards, Evandale, Longford and Westbury. Lying between the Western Tiers and Ben Lomond, the heart of the division contains the largest area of level land in the island and is thought to have its origin in two vast freshwater lakes of an earlier era. The ancient lake-bed soils were easily worked by the early settlers and the area became the island's main centre for cereal crops; cereal crop growing is still practised extensively but the rich grazing potential of the land is also being exploited. Rainfall varies from forty inches in the west to twenty-five inches in the south; the chief rivers are the North and South Esk, the Meander and the Macquarie.

In considering the population of this division it should be taken into account that nearly 54 per cent is located in *suburban* portions of St Leonards, Westbury and Evandale municipalities adjacent to Launceston. (Population, 26,980.)

(6) *Midland Division*: The constituent municipalities are Bothwell, Hamilton, Campbell Town, Ross and Oatlands. In the west are the Central Plateau and Lake Country, generally at an elevation that allows only limited summer grazing. To the east is a lower dissected plateau where more sheep graze than in any other division. Rainfall varies from 80 inches in the extreme west to almost as low as 20 inches in the east and south. The principal rivers in the sheep belt are the Macquarie, Elizabeth and Clyde; the division also contains the western source and upper waters of the Derwent. (Population, 9,880.)

(7) *South Eastern Division*: The constituent municipalities are Glamorgan, Spring Bay, Sorell (*part*), Richmond, Brighton (*part*) and Green Ponds. The division includes the east coast from the Denison River south to Forestier Peninsula and extends inland north of the Derwent opposite New Norfolk (but totally excludes Clarence Municipality). Its partitioned municipalities—Sorell and Brighton—have small areas included in the Hobart Division. In the west of the division, rainfall is as light as twenty inches with slightly more in the east. There is good farmland in the area north of the Derwent but, taken as a whole, the division is mainly devoted to grazing. (Population, 7,160.)

(8) *Southern Division*: The constituent municipalities are Esperance, Port Cygnet, Huon, Kingborough (*part*), New Norfolk (*part*), Bruny and Tasman. Its partitioned municipalities—Kingborough and New Norfolk—have areas included in the Hobart Division. The division includes the Derwent Valley,

the Huon Valley and the D'Entrecasteaux Channel district as well as Bruny Island and Tasman Peninsula; the western half is uninhabited. Rainfall in the west approaches 60 inches or more, in the Huon and Channel districts 35 inches and in the lower Derwent Valley 25 inches or less. The main rural industries are concentrated on hops, orchards and small-fruits while exploitation of timber is important, not only for sawmilling, but also for the mills at Boyer and Geeveston where native hardwoods are converted to paper pulp. The main port used by the division is located at Hobart with Port Huon used seasonally in the export of fruit. (Population, 18,060.)

(9) *Western Division*: The constituent municipalities are Waratah, Zeehan, Gormanston, Queenstown and Strahan. The division reaches south from the mouth of the Pieman River to Port Davey and extends east almost to Lake St Clair. Agriculture plays virtually no part in this area of heavy rainfall and rugged mountains. In a division where rain is measured in feet rather than inches, it is difficult to generalise but 30-year averages for individual stations are as follows: Gormanston, 120 inches; Lake Margaret, 142 inches; Queenstown, 99 inches; Waratah, 89 inches; Zeehan, 97 inches. Considering the mountainous terrain and abundant rainfall, it is not surprising that the island's largest river, the Gordon, should flow in this division, discharging into Macquarie Harbour; the Pieman River to the north is almost as big. The only port—Strahan on Macquarie Harbour—is approached through a narrow rocky entrance called Hells Gates; strong currents and a sand bar are additional navigational hazards.

Settlement in the division is mainly related to mining since this is the island's richest mineral-bearing tract, the chief minerals being copper, zinc, silver-lead, tin and iron ore.

The main population concentrations are in and around Queenstown, Rosebery, Zeehan and Strahan. (Population, 11,300.)

Former Statistical Divisions

The Statistical Divisions just described are those employed to classify data from the 1966 Census of Population. Prior to the Census, the cities of Hobart and Glenorchy were combined and called the South Central Division. The revised classification does away with this grouping and substitutes the Hobart Statistical Division, an area much larger than the South Central Division.

AREA OF STATE

Major and Minor Islands

The official area of the State of Tasmania (based on the 1963 survey) is 26,383 square miles (16,885,000 acres). Prior to this date an estimate made in 1907 indicating an area of 26,215 square miles (16,778,000 acres) was accepted.

The State is composed of 49 local government areas (cities and municipalities) and three of these are either islands or groups of islands.

Details of the 'island municipalities' are as follows:

Island Municipalities—						Area (Sq. Miles)
Bruny	..	..	..	..	..	139.80
King Island	..	..	..	..	..	424.40
Flinders	..	..	..	..	..	768.93
Total	..	..	..	..	..	1,333.13
Remaining Municipalities and Cities	..	..	..	..	..	25,049.87
Grand Total	..	..	..	..	..	26,383.00

While the 'island municipalities' include the bulk of the lesser islands forming part of the State, some islands are still included in the area of coastal municipalities, e.g. Maria Island in Spring Bay Municipality. Macquarie Island, site of an Antarctic Research Station and situated in 54° South latitude, is a Tasmanian dependency and included in the Esperance Municipality; the island is 21 miles long with an average width of two miles.

Area of Municipalities and Cities

In the table that follows, the measured area of the State (16,884,971 acres or 26,382.76 sq. miles) has been rounded, in total, to the nearest 1,000 acres and to the nearest sq. mile. The corrections necessary to reconcile to the rounded totals have been made by adjusting the area of Esperance, the largest municipality. Where municipal boundaries lie in the sea, these have been disregarded so that the stated area relates to a physical boundary (i.e. the coastline) and not to a legal boundary (which may lie in a seaway or estuary.)

Area of Statistical Divisions and Local Government Areas

Local Govt Area and Statistical Division	Area		Local Govt Area and Statistical Division	Area	
	Acres	Sq. Miles		Acres	Sq. Miles
Hobart (H) (a) ..	19,728	30.82	Beaconsfield ..	157,628	246.29
Glenorchy (H) (a) ..	29,593	46.24	Fingal	674,953	1,054.61
Clarence (H)	62,075	96.99	Flinders	492,115	768.93
Brighton (SE) (H) ..	108,905	170.16	George Town ..	161,614	252.52
Glamorgan (SE) ..	379,325	592.70	Lilydale	168,987	264.04
Green Ponds (SE) ..	102,827	160.67	Portland	390,783	610.60
Richmond (SE) ..	140,391	219.36	Ringarooma ..	403,238	630.06
Sorell (SE) (H) ..	193,199	301.87	Scottsdale ..	319,143	498.66
Spring Bay (SE) ..	277,195	433.12			
Bruny (S)	89,476	139.80	Total NE. Div.	2,768,461	4,325.71
Esperance (S) (b) ..	1,528,586	2,388.61			
Huon (S)	191,306	298.92	Evandale	244,513	382.05
Kingborough (S) (H)	87,682	137.00	Longford	246,506	385.17
New Norfolk (S) (H)	325,121	508.00	St Leonards ..	220,202	344.06
Port Cygnet (S) ..	59,385	92.79	Westbury	223,390	349.05
Tasman (S)	118,570	185.27			
			Total N. Midland Div.	934,611	1,460.33
Total—Hobart Div.	238,067	371.98			
SE. Div.	1,156,655	1,807.27	Bothwell	644,463	1,006.97
S. Div. (c) ..	2,318,642	3,623.07	Campbell Town ..	354,714	554.24
Launceston (a) ..	6,974	10.90	Hamilton	1,445,459	2,258.53
			Oatlands	380,520	594.56
Total N. Central Division	6,974	10.90	Ross	306,488	478.89
Burnie	152,647	238.51	Total Midland Div.	3,131,644	4,893.19
Circular Head ..	1,215,094	1,898.58			
Deloraine	720,687	1,126.07	Gormanston ..	709,627	1,108.79
Devonport	28,696	44.84	Queenstown ..	34,973	54.65
Kentish	293,436	458.49	Strahan	922,355	1,441.18
King Island	271,615	424.40	Waratah	669,373	1,045.90
Latrobe	135,608	211.89	Zeehan	742,009	1,159.39
Penguin	106,712	166.74			
Ulverstone	126,342	197.41	Total W. Div. ..	3,078,337	4,809.91
Wynyard	200,772	313.71			
			Total Tasmania(d)	16,885,000	26,383.00
Total NW. Div. ..	3,251,609	5,080.64			

(a) Cities.

(b) Measured area is 2,388.37 sq. miles (1,528,557 acres).

(c) Measured area is 3,622.83 sq. miles (2,318,613 acres).

(d) Measured area is 26,382.76 sq. miles (16,884,971 acres).

At the 1966 Census, new definitions based on high population density were employed to fix the boundaries of urban areas. The two major centres in the State, with boundaries conforming to the definitions, were: (i) Urban Hobart (40.2 sq. miles); and (ii) Urban Launceston (26.6 sq. miles). (See Chapter 5 for definition of these areas.)

Area of Tasmania and Other Australian States

The following table compares the area and length of coastline of Tasmania with those of other Australian States and Territories:

Australia: Areas and Coastline of States and Territories

State or Territory	Area	Proportion of Total Area	Coastline	Area per Mile of Coastline
	sq. miles	per cent	miles	sq. miles
Tasmania	26,383	0.89	(a) 900	29
New South Wales ..	309,433	10.43	(b) 700	443
Victoria	87,884	2.96	680	129
Queensland	667,000	22.47	3,000	222
South Australia ..	380,070	12.81	1,540	247
Western Australia ..	975,920	32.88	4,350	224
Northern Territory ..	520,280	17.53	1,040	500
A.C.T.	939	0.03	..	..
Mainland	2,941,526	99.11	11,310	260
Australia	2,967,909	100.00	12,210	243

(a) Excludes coastline of islands totalling at least a further 500 miles.

(b) Includes coastline of Jervis Bay which is part of Australian Capital Territory.

Jurisdiction in Bass Strait

There are in Bass Strait numerous islands, the chief being the Furneaux group (Flinders, Cape Barren and Clarke), King Island and the Hogan, Curtis and Kent groups. These all form part of the State since the boundary line between Tasmanian and Victorian sovereignty is defined as 39° 12' South latitude; this parallel lies 5 miles south of Wilsons Promontory, so that some Tasmanian territory is located only 8 to 10 miles from the Victorian coast (Rodondo and West Moncoeur islands).

The proclamation of 39° 12' South latitude as the northern boundary of Tasmanian sovereignty dates from 1825 when Van Diemen's Land became a colony distinct from New South Wales. Subsequent State mining legislation has followed the limits of the 1825 proclamation and Tasmania claims mining jurisdiction over Bass Strait as far north as 39° 12' South latitude. Australia is a signatory to the Convention on the Continental Shelf signed at Geneva on 29 April 1958; in 1967, the Commonwealth and all the States passed legislation affecting oil exploration on the continental shelf. Tasmania remains the authority to issue permits and licences for the area south of 39° 12' South latitude. Proposed Federal legislation concerning control of offshore mineral resources exempts petroleum. By mid-1970, ten drill holes had been bored in Tasmanian waters without success. Five wells had been sunk in the Bass Basin, three in the Otway Basin and two in the Gippsland Basin. A small non-commercial show of gas was recorded in Bass III while hydro-carbons encountered in Pelican I caused this well to be plugged pending further studies. Victoria has constructed pipelines to convey natural gas and oil found in its territorial waters to Melbourne via the Latrobe Valley.

CLIMATE OF TASMANIA

Introduction

Since Tasmania lies between 40° and $43\frac{1}{2}^{\circ}$ south of the Equator, and is an island with no point more than 70 miles from the sea, its climate is classified as temperate maritime. On the coast the daily temperature range averages about 10°F , but inland the range is almost doubled, indicating a slight continental effect.

The combination of mountainous terrain in the western half of the State and prevailing westerly winds produces a marked west-east variation of climate, and especially of rainfall.

Summers are mild and characterised by greatly lengthened days. The sun reaches a maximum elevation of $70-73^{\circ}$ in mid-summer, giving 15 hours of daylight in the north and $15\frac{1}{2}$ hours in the south. In mid-winter, the sun's elevation does not exceed $20-23^{\circ}$, and the shortest day consists of $9\frac{1}{4}$ hours of daylight in the north, falling to slightly under 9 hours in the south.

In winter, westerly winds reach their greatest strength and persistence, causing a distinct maximum in rainfall distribution in the west and north-west. In the east and south-east, rainfall is more evenly distributed over the year. Coastal areas of Tasmania enjoy relatively mild winters as compared with, say Boston (U.S.A.) which is about the same latitude north.

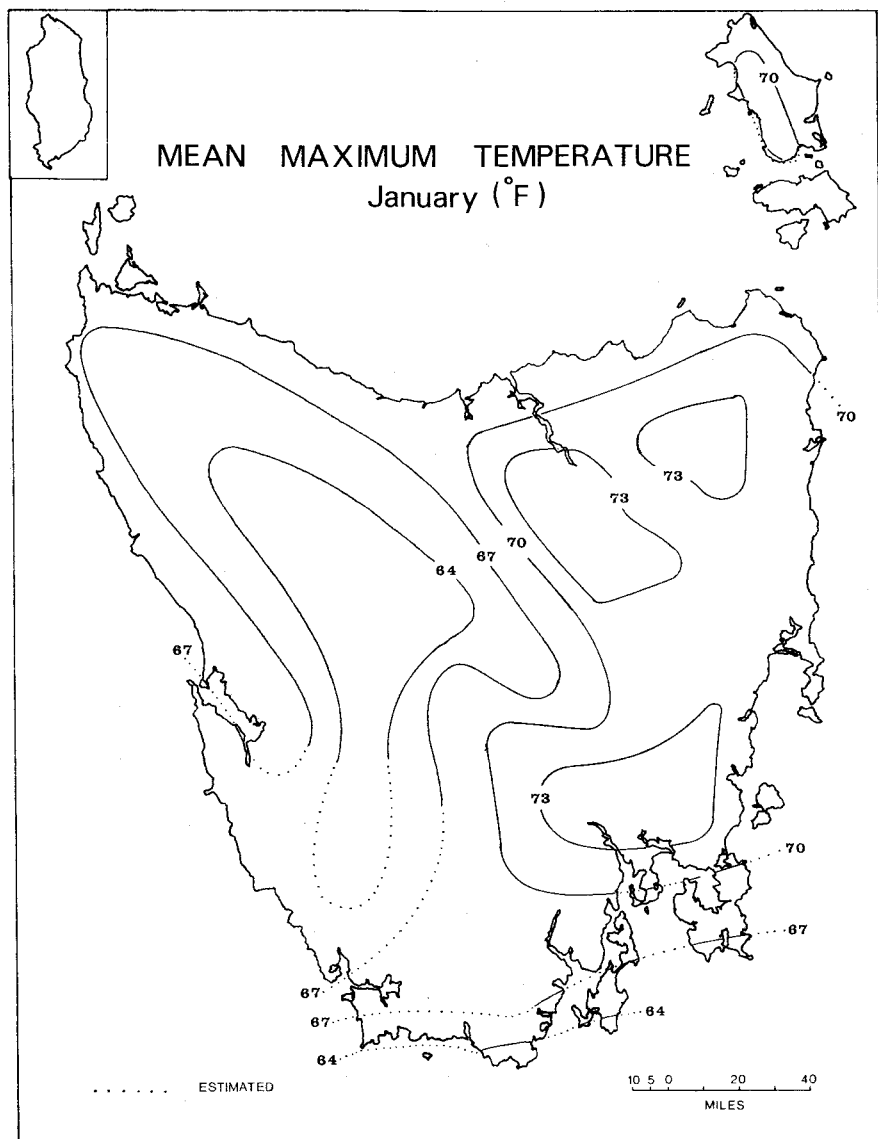
Temperature

Sea level temperatures are reduced by approximately 5°F for each 1,000 feet of altitude. Hence in a mountainous island like Tasmania the isotherms (lines of equal temperature drawn on a map) will be much influenced by topography. Greater cloud cover over the western half, a result of the persistent westerlies, further decreases day-time temperatures in the west, while the Föhn effect warms and dries the westerly airstreams as they descend to the Midlands, the East Coast and South-East districts.

Frosts are affected markedly by topography, the valleys acting as natural channels for the drainage of cold air at night. Widespread severe frosts are experienced in winter on the Central Plateau and in upland valleys. Inland centres below 1,000 feet are virtually frost-free only in summer, while the north coast, the east and south-east have few frosts after early October. Above 1,000 feet there is no frost-free month.

Tasmania only occasionally experiences the extremes of temperature common to mainland States. High temperatures recorded in the east and south-east of Tasmania generally occur on the last day of a warm spell during which a dry air mass of continental origin is advected over this State, from a direction between north and north-west. Some cooling in the lower air layers over the waters of Bass Strait prevents the northern coast from reaching the higher temperatures that are experienced in the south under these conditions. The highest maximum temperature recorded in Tasmania was 105.5°F at Bushy Park in December, 1945. The lowest temperature recorded was 9°F at Oatlands in May 1902.

The recorded extremes of temperature for Hobart are 105.2°F in December 1897 and 27.7°F in July 1895. Readings above 100° or below 30° are rare, the mean maximum temperature in summer being 70°F and the mean minimum in winter, 41°F .

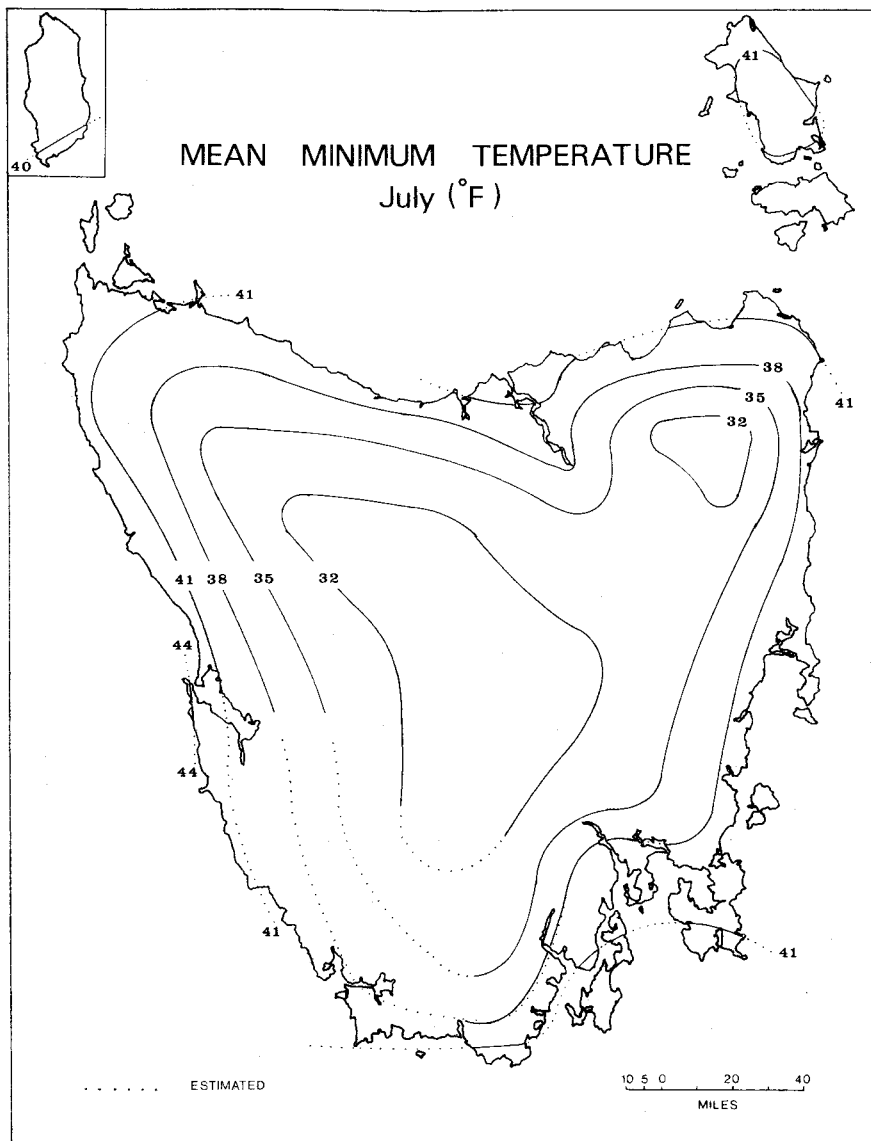


The maps show the mean maximum temperature for January and the mean minimum temperature for July over Tasmania. The mean maximum is the average of daily maxima for January; the mean minimum the average of daily minima for July.

Winds

The prevailing winds over most of the island are north-west to south-west, with greatest strength and persistence during late winter. Speed and direction vary with the eastward passage of high and low pressure systems. In the summer months, when westerlies are weak, afternoon sea-breezes become the predominant wind in coastal areas. Occasional periods of north-east to south-east winds occur.

The highest average wind speeds are associated with extensive deep depressions over ocean areas south of Tasmania.



Rainfall

Tasmania's position on the northern edge of the main mid-latitude westerly air-stream, its exposure to this stream and the mountainous nature of the terrain are the controlling influences on the amount, distribution and reliability of the State's rainfall.

In the west, average annual rainfall ranges from 50 to 60 inches on the coast to 142 inches at Lake Margaret; in the north-east, from 22 inches on the coast to 50 inches on the highlands; while rainfall in the north-west ranges from 35 inches near the coast to 70 inches in the higher inland areas.



Aboriginal rock carvings, Mt Cameron West

(Rhys Jones)

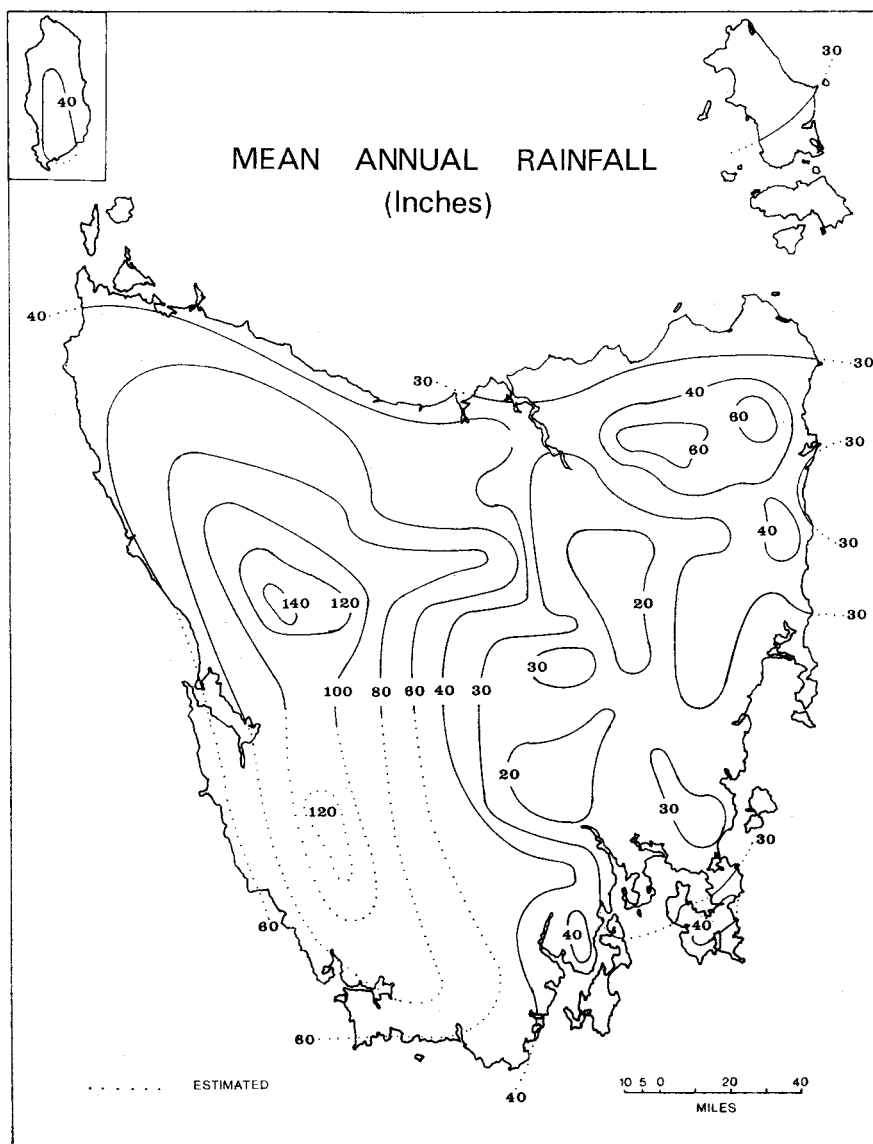


Excavations at Mt Cameron West rock carvings

(Rhys Jones)

Extreme three to five-day rainfalls occur most often on the west coast in late June, when the westerlies are increasing in strength and persistence and the sea temperature is well above the land temperature. In the north, short periods of extreme precipitation occur when wind flow is sustained for up to two days from the north-east, usually mid to late autumn. The high moisture content of such streams from over the relatively warm waters of the Tasman Sea results in heavier, if less prolonged, rainfall than is produced in the westerly streams.

The average annual rainfall distribution over Tasmania is shown on the accompanying map.



There is a strong gradation in rainfall from west to east, because of topography, with a distinct rain shadow east of the Central Plateau. Parts of the Midlands average less than 20 inches per year. Totals in the east and south-east are higher (up to 40 inches on exposed slopes).

Rainfall is least reliable in the east, south-east, Midlands and Derwent Valley. These areas are driest during late summer and late winter, when respectively, westerlies are relatively absent or at their strongest. Highest rainfall in these areas tends to occur in autumn and spring, under the influence of small cyclonic depressions off the East Coast.

Effective rainfall is the amount necessary to compensate for evaporation, begin germination and maintain plant growth above the wilting point. Average rainfall is sufficient for this purpose from May to September. From October to January the chance of receiving effective rainfall becomes less and less, except in the west and north-west, where the probability remains mostly better than 50 per cent. In the Midlands, the Derwent Valley, the south-east and east, and in the northern inland, the chance of receiving at least effective rainfall during the summer months is very small.

Snow and Hail

Snow and hail can be experienced over the highlands at any time of the year. Heaviest snowfalls occur, as a rule, in late winter and spring, and less frequently in June and July. Extensive snow below 500 feet occurs, on the average, less than once every two years, associated with an unusually vigorous outbreak of cold air from Antarctic regions. There is no permanent snowline, but patches of snow often remain on the highest peaks till December.

Hail is most likely in spring, though possible in any month. Hail storms are a big risk to fruit crops in the Huon Valley and on the Tasman Peninsula and sometimes cause extensive damage.

Thunderstorms

These are most common in the north and north-west of the State and are associated with the lifting of warm moist air by a cold front. Thunderstorms occur mainly in the summer months. Hobart and Launceston average five to seven storms per year, and the north and north-west ten to fifteen. The Central Plateau and north-eastern highlands report, on average, about five storms per year, while the Midlands, as gauged by Oatlands, has less than three.

Floods

In Tasmania the river system most subject to flooding is the South Esk. The catchment includes most of the north-eastern highlands where annual rainfall averages over 50 inches. As much of the South Esk and its tributaries flow through flat country, flooding can be widespread.

The most severe floods on record in the South Esk basin occurred in April 1929 and in late May 1969. The latter had much less damaging effects for Launceston because of the extensive levee system erected as a result of the 1929 flood.

Flooding of the Derwent can be extensive but is less frequent than in the case of the South Esk. The most severe flood on record in the Derwent occurred in April 1960.

Streams in the north-west and south have much smaller catchments and are fast flowing; flooding, when it occurs, is localised. Much has still to be learnt about river behaviour in the sparsely populated mountain region of the west and south-west. In August 1970, the worst floods for 26 years were experienced in the Latrobe area on the North-West Coast. Damage throughout the area amounted to \$3.0m.

Humidity

The mean relative humidity at both 9.00 a.m. and 3.00 p.m. exceeds 50 per cent at all stations in all months of the year. Relative humidity is generally higher in the morning than in the afternoon, and higher in coastal regions than inland. Days of high temperature combined with uncomfortably high humidity are rare. In the east and south-east, warm dry winds from a west or north-west direction may occasionally have a relative humidity as low as ten per cent.

Droughts and Bushfires

Although Tasmania is the wettest State in the Commonwealth drought conditions are not unknown. Unlike the remainder of Australia droughts in Tasmania tend to be highly localised and of reasonably short duration, usually spanning only two to three years and, therefore, are less severe than in other States.

The localised nature of the Tasmanian drought greatly reduces its severity when compared with droughts in mainland States, where they tend to influence vast areas. The most severe droughts recorded in this State prior to the 1967-69 east coast drought were those occurring in the periods 1888-89, 1897-98, 1918-20, 1933-34, 1945-46 and 1949-52.

The years 1967 and 1968 saw a period of severe drought in the eastern half of the State. The rainfall which had been near normal in 1966, failed during the first half of 1967 and the drought did not break in central Tasmania until the second half of 1968, and on the extreme east coast until the summer of 1969.

The drought was primarily due to an absence of eastern airstreams, which bring moisture-laden winds to the east coast. Westerlies predominated throughout 1968, and generally rainfall in the western half of the State was above average. The situation deteriorated in the spring of 1967 and for the second time since 1950 the Government was forced to introduce electricity restrictions on bulk consumers. These restrictions, although relaxed, were not removed until 1 October 1968. Stock losses in the central and eastern areas were high. Agistment was undertaken by landowners in the western and northern areas of the State allowing considerable numbers of sheep and cattle to be moved from the drought area. The fodder situation was worsened to some degree by the running down of reserves following the provision of emergency supplies for pastoralists affected by the disastrous 1967 bushfires in southern Tasmania. Conditions improved during early 1969, although a drought pocket remained on the east coast between Bicheno and St Helens until autumn.

Serious bushfires occurred in 1898, 1915, 1946, 1951 and 1967. The bushfire of 7 February 1967 was the most severe in the State's history causing 62 deaths and damage to property estimated to be in excess of \$25m.

**Rainfall at Stations in Drought Affected Areas:
Central and Eastern Tasmania**

Station	Period					
	Jan.- June 1967	July- Dec. 1967	Jan.- June 1968	July- Dec. 1968	1967	1968
Campbell Town—						
Actual (points)	266	1,030	917	1,061	1,296	1,978
Proportion of Normal (per cent)	27	86	92	88	59	90
Mathinna—						
Actual (points)	371	1,949	1,113	1,616	2,320	2,729
Proportion of Normal (per cent)	23	110	69	92	69	81
St Marys—						
Actual (points)	815	1,619	858	1,076	2,434	1,934
Proportion of Normal (per cent)	39	83	42	55	61	48
St Helens—						
Actual (points)	511	1,354	702	1,101	1,865	1,803
Proportion of Normal (per cent)	34	89	47	72	60	58
Bicheno—						
Actual (points)	433	1,315	888	696	1,748	1,584
Proportion of Normal (per cent)	28	103	58	54	62	56
Orford—						
Actual (points)	459	1,990	853	745	2,449	1,598
Proportion of Normal (per cent)	32	138	59	52	85	55

Evaporation

Evaporation depends mainly on wind strength, moisture content of the air stream and sunshine. Low lying areas of the north, east and south-east have an annual evaporation of between 30 and 36 inches of water, but nowhere does the highest monthly average (occurring in January) exceed 6 inches. The Central West Coast area records less than 20 inches per annum, due to moisture content of the prevailing westerlies and high average cloud cover.

Sunshine

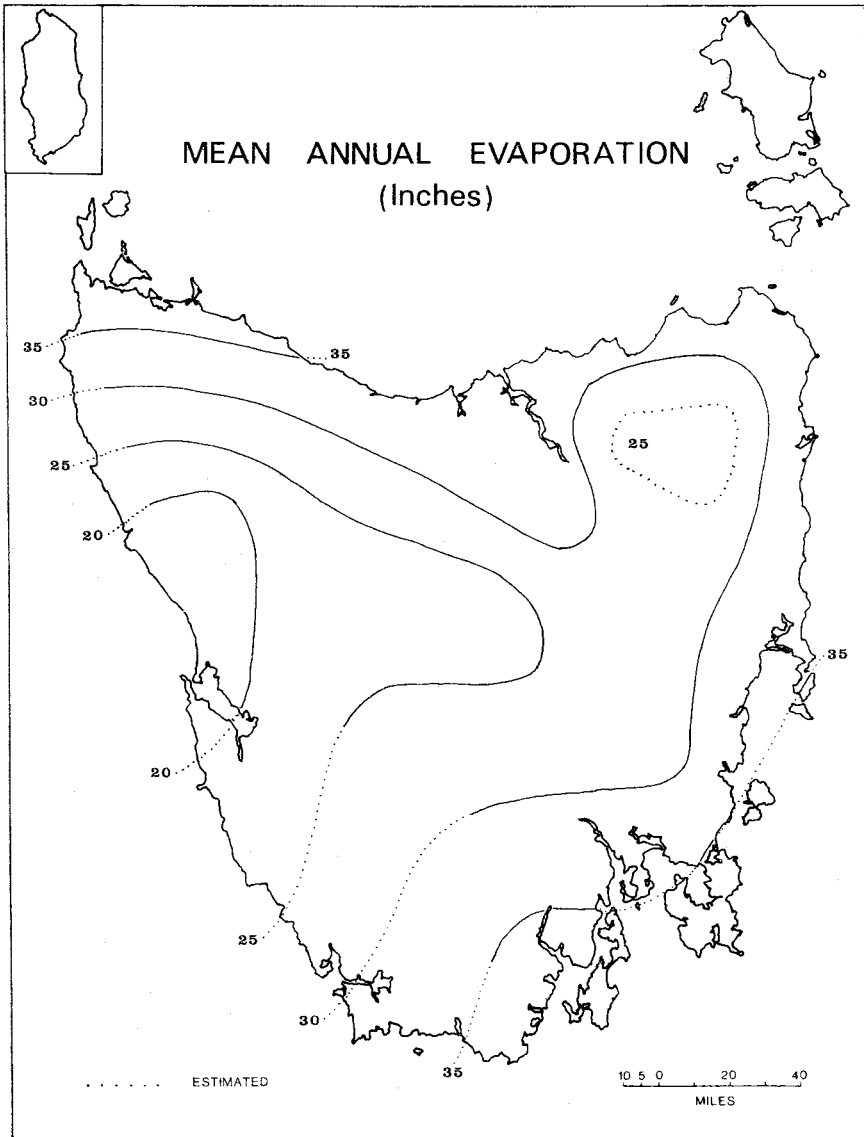
The average number of hours of sunshine per year ranges from about 2,500 hours in the northern Midlands to less than 1,750 hours on the west coast and western highlands, this area having the least sunshine in Australia. Hobart averages 2,100 hours per year and Launceston around 2,400.

In January daily averages of sunshine range from nine hours per day between the Midlands and Launceston to 6 hours per day on the west and south coasts. In mid-winter, average daily sunshine is down to a maximum of three hours on the east coast and to considerably less on the west coast and highlands.

The Climate of Hobart

Temperature: Mean maximum temperature exceeds 70°F in January and February. On average there are two or three days per year with maximum temperatures greater than 90°F. Only once have three successive days over 90°F been recorded in Hobart; in February 1968.

Minimum temperatures below 30°F are rare.



The average annual frequency of days of frost is 31, mostly between June and August. No frosts have been recorded in January.

Rainfall: There is a strong gradient of rainfall caused by the bulk of Mt Wellington immediately west of Hobart suburbs. At the Pinnacle (4,166 feet) annual rainfall averages 65 inches. Ferntree (1,500 feet) has 55 inches. At the Regional Office of the Bureau, the average is nearly 25 inches but some suburbs on the Eastern Shore receive only 23 inches.

Monthly totals are fairly uniform. The wettest 12 months on record yielded 43.4 inches (to December 1916) and the driest, 13.0 inches (to November 1943).

Relative Humidity: Highest humidity is at the time of lowest temperature, in the early mornings during winter. As temperatures rise to 3 pm, humidity decreases by 15-20 per cent. The seasonal variation is not great, although the average humidity during the winter months is 70 to 75 per cent and during the summer months 58 per cent. Periods of high humidity combined with high temperatures are rare.

Fog: Fogs occur in the city about four times per year, in the cooler months, but are somewhat more frequent over and near the Derwent, down which they are often carried on a light north-west wind. Fog frequency is far less than either that of Launceston or Melbourne.

Wind: The main wind direction is north-west, induced by the orientation of the Derwent Valley. Next in importance is the sea-breeze (from south or south-east) during summer months.

The strongest wind gust experienced in Hobart was 93 mph recorded as a storm struck in September 1965.

Snow and Hail: Snow below 1,000 feet occurs, on the average, less than once per year. Falls lying in the city, almost at sea level, have occasionally been recorded, the last being in September 1969. Snow generally lies on Mt Wellington during winter and early spring months, but is rare between November and March. Hail occurs, on the average, four times per year, mainly between September and November.

The Climate of Launceston

Being over 30 miles from the coast, Launceston exhibits a slightly continental effect—greater seasonal and daily variations of temperature and lower rainfall as compared with stations on the coast.

Temperature: Average maximum temperature exceeds 75°F in January and February, 70°F in December and March, and 55°F in June and July. Average minimum is in the low fifties in summer, falling below 40°F in winter. Freezing temperatures are common during winter mornings, the lowest recorded being 21°F. Up to 50 frost days are to be expected in a year, mostly from May to August. Light frosts may occur in summer.

Rainfall: The annual average is 29 inches. The wettest month is July (3.4 inches) while January and February, the driest months, each receive less than half this amount. The wettest month on record is August 1936 (10.01 inches). Some severe thunderstorms are experienced. Annual totals range from 18.40 inches (1908) to 41.63 inches (1946). Snow does not settle in Launceston, but falls occur on surrounding hills.

Relative Humidity: Seasonal and daily variations are similar to those for Hobart, but the daily readings are five per cent to 10 per cent higher.

Fog: Occasions of high humidity, associated with moist north-east air-streams, are relatively frequent. Fog occurrence averages more than 30 days per annum, mostly between May and August.

Wind: The NW-SE orientation of the Tamar Valley has a marked effect on surface winds, which conform mainly to these directions. The north-west wind is often reinforced in the afternoon by a sea-breeze from much the same direction. Strong winds are most common during the colder half of the year and severe squalls can occur in association with thunderstorms.

Rainfall at Selected Stations

Annual Rainfall at Representative Stations
(Inches)

Station	Statistical Division	1966	1967	1968	1969	Long-term Average(a)
Avoca	NE.	20.80	<i>n.r.</i>	20.57	25.37	21.43
Beaconsfield	NE.	30.12	25.29	48.34	39.42	36.91
Burnie (Holymans)	NW.	34.64	28.46	46.56	<i>n.r.</i>	38.65
Campbell Town	Midland	20.42	12.96	19.78	23.64	21.93
Deloraine (Ashley)	NW.	36.05	26.88	45.77	36.90	37.64
Franklin	Southern	30.79	27.72	42.74	39.50	35.28
Hobart (Weather Bureau)	Hobart	27.52	19.23	18.64	28.35	24.83
Hobart (Airport)	Hobart	23.43	18.31	15.98	26.09	22.42
Launceston (Airport)	N. Midland	26.63	19.40	35.98	31.62	28.03
Lilydale	NE.	31.70	27.13	45.79	38.46	38.21
Longford	N. Midland	24.26	18.58	32.39	28.91	24.72
Lymington South	Southern	27.21	<i>n.r.</i>	<i>n.r.</i>	<i>n.r.</i>	31.24
New Norfolk	Southern	22.26	15.17	20.82	23.27	21.88
Oatlands	Midland	22.83	14.80	16.83	24.61	22.35
Ringarooma	NE.	39.37	29.53	60.48	46.97	48.49
Scottsdale	NE.	32.95	<i>n.r.</i>	<i>n.r.</i>	36.74	41.99
Smithton	NW.	37.24	32.40	52.28	45.89	42.89
Swansea	SE.	24.74	17.84	<i>n.r.</i>	37.49	24.07
Triabunna	SE.	26.06	22.02	14.72	38.11	25.90
Ulverstone	NW.	34.09	28.09	45.47	40.76	37.96
Woodbridge	Southern	33.24	29.90	37.68	40.68	35.96
Zeehan	Western	81.87	72.11	<i>n.r.</i>	92.74	96.71

(a) Number of years of record ranges from 85 at Hobart Weather Bureau down to 23 years at Hobart Airport.

Temperature and Rainfall: Hobart

The next table gives the main climatic data for Hobart during the year 1969 on a monthly basis:

Hobart Weather in 1969

Month	Shade Temperature				Mean Daily Hours of Sunshine	Rainfall	
	Mean Maxima	Mean Minima	Extremes			Total in 1969	Long- term Average (<i>b</i>)
			Maximum (<i>a</i>)	Minimum (<i>a</i>)			
	°F	°F	°F	°F	hours	inches	inches
January ..	72.5	54.3	86.0	46.0	9.7	0.90	1.93
February ..	67.5	57.1	95.0	46.0	5.0	4.59	1.59
March ..	69.5	54.1	91.0	43.0	6.2	1.05	1.85
April ..	62.4	48.8	75.0	39.0	5.0	2.86	2.18
May ..	56.5	43.7	70.0	34.0	3.7	3.42	1.91
June ..	53.1	41.2	59.0	31.0	3.9	1.54	2.38
July ..	55.0	42.2	60.0	36.0	3.8	1.27	2.12
August ..	56.9	42.3	68.0	34.0	5.6	1.95	1.89
September ..	56.7	41.6	65.0	34.0	5.7	0.57	2.10
October ..	62.6	45.2	84.0	34.0	7.3	0.99	2.52
November ..	64.5	50.0	82.0	43.0	6.0	4.45	2.15
December ..	64.3	49.9	78.0	40.0	6.1	4.76	2.21
Total for Year	..	..	..	..	..	28.35	24.83

(a) Maximum for year: 95.7°F on 20 February, minimum for year: 31.2°F on 21 June.

(b) Period of record is 85 years.

Seasonal Temperatures

The mean temperature for any locality can give quite a false impression, e.g. a mean temperature of 60°F based on a maximum of 120°F and a minimum of 0°F, all in the one day. A better way of examining a locality's climate is to take the maximum temperature each day and average these readings for each season; similarly to take the minimum temperature each day and average these readings for each season. These mean maxima and minima then give an indication of the daily variation that may be expected. The following table shows the mean maximum and mean minimum temperatures for six selected stations in summer, autumn, winter and spring; Hobart, Devonport and St Helens are on the coast; Launceston is about 30 miles from the sea but at a low altitude; Oatlands is also about 30 miles from the sea at 1,400 feet; Zeehan is 12 miles from the sea at 580 feet.

Temperatures at Selected Stations, 1969
(°F)

Station	Maximum Temperatures		Minimum Temperatures		Mean Temperatures	
	Mean for Season (a)	Departure from Normal	Mean for Season (b)	Departure from Normal	Mean for Season	Departure from Normal
SUMMER (December to February)						
Hobart	68.8	-1.0	54.0	+1.9	61.4	+0.5
Launceston ..	72.1	-2.9	52.7	+1.1	62.4	-0.8
Zeehan	68.9	+2.1	49.6	+1.6	59.3	+1.9
Devonport ..	68.8	-0.5	55.0	+3.0	61.9	+1.2
Oatlands	70.0	+0.3	48.5	+2.6	59.3	+6.5
St Helens	70.4	-0.8	54.1	+2.8	62.3	+1.1
AUTUMN (March to May)						
Hobart	62.9	+0.3	48.2	+0.8	55.5	+6.1
Launceston ..	62.6	-2.9	45.7	+0.4	54.1	-1.3
Zeehan	60.1	0.0	45.2	+0.6	52.7	+0.4
Devonport ..	62.4	-0.9	n.r.	n.r.	n.r.	n.r.
Oatlands	59.4	-0.8	41.7	+0.8	50.5	0.0
St Helens	66.8	+2.0	46.4	+0.9	56.6	+1.5
WINTER (June to August)						
Hobart	54.8	+1.3	41.4	+0.7	48.1	+1.0
Launceston ..	53.9	-0.9	38.8	+1.1	46.3	+0.1
Zeehan	52.2	+0.2	37.7	-1.1	44.9	-0.4
Devonport ..	53.8	-1.1	42.3	+2.5	48.1	+0.8
Oatlands	51.1	+1.0	35.6	+0.7	43.3	+0.8
St Helens	58.3	+2.0	37.0	-0.8	47.7	+0.7
SPRING (September to November)						
Hobart	61.4	-0.7	45.6	+0.1	53.5	-0.3
Launceston ..	63.0	-1.3	43.2	-2.2	53.1	-1.7
Zeehan	57.7	-0.9	n.r.	n.r.	n.r.	n.r.
Devonport ..	60.2	-0.2	47.4	+3.0	53.8	+1.4
Oatlands	58.3	-1.6	39.1	-0.6	48.7	-1.1
St Helens	64.4	+1.0	43.8	+0.3	54.1	+0.6

(a) Average of maximum daily temperatures for season.

(b) Average of minimum daily temperatures for season.

Rainfall in Districts

Tasmania is divided into nine meteorological districts (not to be confused with statistical divisions) with fairly well-defined land use patterns appropriate to each. The following table shows rainfall totals for the past 10 years:

Rainfall of Tasmania in Districts
(inches)

Period	Agriculture, Dairying and Mixed Farming		Grazing (Mainly Sheep)	
	Northern	King Island	Central Plateau	Midlands
1960	41.50	46.37	55.15	26.00
1961	29.91	34.55	33.83	15.38
1962	37.60	35.48	47.17	20.07
1963	33.65	30.79	30.74	14.94
1964	50.44	45.49	57.47	26.56
1965	31.06	35.89	35.86	18.25
1966	31.63	38.41	34.47	21.40
1967	25.85	29.67	30.19	13.89
1968	43.32	42.05	49.39	18.34
1969	38.28	36.36	43.62	23.62
District Average (a)	39.43	36.97	38.03	21.70

(a) Long-term annual average based on 55 years of record.

Rainfall of Tasmania in Districts—continued
(inches)

Period	Fruit Growing, Grazing, Forestry		Dairy Farming	Mining	Grazing
	Derwent Valley	South East	East Coast	West Coast	Flinders Island
1960	27.55	32.05	37.90	91.79	30.23
1961	18.61	21.67	28.17	76.69	30.46
1962	29.93	30.12	29.96	105.99	37.07
1963	17.94	19.69	24.40	73.26	26.99
1964	30.98	32.05	36.65	115.97	37.45
1965	21.92	27.66	25.89	93.60	25.45
1966	25.15	31.03	28.72	78.02	26.04
1967	20.10	25.24	22.58	72.39	24.83
1968	29.09	28.53	22.02	124.70	26.41
1969	28.91	34.62	40.24	95.37	32.04
District Average (a)	26.52	29.18	32.07	91.34	28.84

(a) Long-term annual average based on 55 years of record.

Meteorological Conditions, 1969

The dry conditions of late 1968 continued into the early part of 1969 with below normal rainfall in eastern districts. Temperatures were above normal over most of the State. By February, the pattern changed and a large part of the State recorded rainfalls in excess of 300 per cent of normal. Above-average cloudiness resulted in above-average minimum temperatures and below-normal daytime maxima. This pattern of high rainfall continued until mid-

March, with exceptionally warm conditions. A rain deficiency period then commenced and continued through to May. April was notable for its low temperatures.

May saw the development of two east coast depressions which resulted in rainfalls in excess of 600 per cent of normal in eastern areas and the most severe floods in the South Esk since 1929. Minimum temperatures were generally above normal due to increased cloudiness and daytime temperatures correspondingly below average.

During June, a reversal in weather pattern commenced with a westerly regime becoming established, giving normal rainfalls to all districts except the north-east where only 20 per cent of the average rainfall was received. Calm frosty conditions during mid-month and a cold surge later in June gave below-average maximum temperatures and noticeably cold nights with frequent frosts.

The normal rain distribution continued into August with temperatures becoming mild through July to well above normal throughout most of August.

September brought a return to wintry conditions with maximum temperatures the lowest since 1905 in many areas. Snowfalls were frequent and a major cold outbreak caused snow to fall to sea level in parts of the west and south. Rainfall was below normal in all areas but the west. This rain deficiency continued into October with clearer than normal skies bringing warm days and cool nights.

November again brought a prevalence of easterly rain situations with falls in the east of 200 to 300 per cent of normal. Temperatures were cool in the east but ranged to well above normal in the west, where rainfall was less than 50 per cent of normal.

This pattern continued to the end of the year, frequent cold frontal passages and rain depressions caused above-normal rainfalls, (200 per cent of normal in the east) with further flooding. Increased cloudiness and cold winds resulted in well below-average daytime maxima during most of the month.

(The section on Climate was prepared by the Bureau of Meteorology.)

DAYLIGHT SAVING IN TASMANIA

History

Daylight saving was introduced as a temporary measure during World War II (from 1942) and was given-up as soon as peace came. In 1967-68, the Tasmanian Parliament re-introduced it for the six-month period October to March inclusive; for these months, Tasmanian clocks were set one hour ahead of E.S.T. (Eastern Standard Time) which corresponds with longitude 150°E and which is observed in the eastern Australian States (but not in S.A. or W.A.). In 1968, the Tasmanian Parliament again legislated for daylight saving for a two-year trial period from the last Sunday in October to the second Sunday in March. Permanent daylight saving was accepted by Parliament in June 1970.

Tasmanian Latitudes

The following table has been compiled to show the time of sunrise and sunset at latitudes 40°S and 45°S. Latitude 40°S passes through King and Flinders Islands while latitude 45°S lies a hundred miles or so in the sea south of

the Tasmanian south coast. Rounded latitudes for Tasmanian centres are: Hobart, 43°S; Queenstown, 42°S; Launceston, 41°30'S; George Town, and Burnie 41°S. *Simple linear interpolation* will not yield the time of sunrise or sunset for latitudes between 40°S and 45°S with complete accuracy, but the error will only be of the order of one or two minutes (if due allowance is made for the longitude of the locality, the rule being to add 4 minutes for each degree of longitude west from 150°E).

Sunrise and Sunset at Longitude 150°E for 1970
(24-hour Clock Notation)

Date	Sunrise (a)		Sunset (a)		Date	Sunrise (a)		Sunset (a)	
	Lat. 40°S	Lat. 45°S	Lat. 40°S	Lat. 45°S		Lat. 40°S	Lat. 45°S	Lat. 40°S	Lat. 45°S
Jan. 3.. ..	0436	0418	1932	1950	July 2 ..	0723	0739	1645	1628
9.. ..	0441	0424	1932	1949	8 ..	0721	0738	1648	1632
15.. ..	0447	0431	1930	1946	15 ..	0719	0735	1652	1638
21.. ..	0454	0439	1927	1942	22 ..	0714	0728	1659	1644
27.. ..	0501	0448	1923	1937	29 ..	0709	0722	1705	1652
Feb. 2.. ..	0509	0456	1918	1930	Aug. 4 ..	0703	0715	1710	1658
8.. ..	0516	0505	1912	1922	10 ..	0656	0707	1715	1705
14.. ..	0523	0514	1904	1914	16 ..	0648	0658	1721	1712
20.. ..	0531	0523	1857	1904	22 ..	0640	0648	1726	1719
26.. ..	0538	0531	1848	1854	28 ..	0632	0638	1732	1726
Mar. 4.. ..	0544	0539	1839	1844	Sept. 3 ..	0622	0627	1738	1733
10.. ..	0551	0548	1830	1833	9 ..	0613	0616	1743	1740
16.. ..	0557	0555	1820	1822	15 ..	0603	0605	1749	1747
22.. ..	0604	0603	1810	1811	21 ..	0553	0554	1754	1754
28.. ..	0610	0611	1801	1759	27 ..	0543	0542	1800	1801
Apr. 3.. ..	0616	0618	1751	1748	Oct. 3 ..	0533	0531	1806	1809
9.. ..	0622	0626	1742	1737	9 ..	0524	0520	1812	1816
15.. ..	0628	0633	1732	1726	15 ..	0514	0509	1818	1824
21.. ..	0634	0641	1724	1716	21 ..	0505	0458	1825	1832
27.. ..	0640	0648	1715	1707	27 ..	0457	0448	1832	1840
May 3.. ..	0646	0656	1708	1658	Nov. 2 ..	0449	0439	1839	1849
9.. ..	0651	0703	1701	1650	8 ..	0443	0431	1846	1857
15.. ..	0657	0710	1655	1643	14 ..	0437	0424	1853	1906
21.. ..	0703	0716	1650	1636	20 ..	0432	0417	1900	1914
27.. ..	0708	0722	1646	1632	26 ..	0428	0413	1906	1922
June 2.. ..	0712	0728	1643	1628	Dec. 2 ..	0426	0409	1913	1929
8.. ..	0716	0732	1641	1625	8 ..	0425	0407	1919	1936
14.. ..	0719	0736	1641	1624	14 ..	0425	0407	1924	1941
20.. ..	0721	0738	1641	1624	23 ..	0428	0410	1929	1947
26.. ..	0723	0739	1643	1626	29 ..	0432	0414	1931	1949

(a) E.S.T. at longitude 150°E.

From the data in the previous table, it is possible to deduce the length of the day by subtracting sunrise from sunset. The following table has been compiled to give the hours of daylight for latitude 40°S and latitude 45°S. Approximations can be obtained for intermediate latitudes by *simple linear interpolation* but they will not be completely accurate and may be subject to an error of one or two minutes.

Length of Daylight: Selected Days, 1970
(24-hour Clock Notation)

Date	Lat. 40°S	Lat. 45°S	Date	Lat. 40°S	Lat. 45°S
Jan. 3 ..	1456	1532	July 2 ..	0922	0849
18 ..	1438	1509	20 ..	0941	0913
Feb. 2 ..	1409	1434	Aug. 4 ..	1007	0943
17 ..	1334	1351	19 ..	1040	1022
Mar. 4 ..	1255	1305	Sept. 3 ..	1116	1106
19 ..	1215	1217	18 ..	1154	1152
Apr. 3 ..	1135	1130	Oct. 3 ..	1233	1238
18 ..	1057	1044	18 ..	1312	1324
May 3 ..	1022	1002	Nov. 2 ..	1350	1410
18 ..	0953	0926	17 ..	1422	1450
June 2 ..	0931	0900	Dec. 2 ..	1447	1520
17 ..	0921	0847	20 ..	1501	1537

Sunrise and Sunset, 1971

The previous tables have been compiled from 1970 data but they give *approximate* times for sunrise and sunset in 1971, the maximum error that can occur from using the 'wrong' year is less than two minutes (3 January 1970 is a Saturday; 3 January 1971, a Sunday).

THE MARSUPIALS OF TASMANIA

Mammals and Marsupials

The Sub-Classes of Mammals

Mammalia was the term invented by Linnaeus in 1758 to include that class of animals in which the young are brought forth alive and nourished with milk from the mother's breasts. At this point of time, two mammalian sub-classes were known, the first including man, monkeys, dogs, whales, cows, etc. and the second the marsupials, their existence having been established in 1500 by the Pinzons when they took a Brazilian opossum back to Granada. The discoverers of Australia then slowly expanded the coverage of the marsupial sub-class by reporting kangaroos, wombats, bandicoots, 'opossums' and the wolf-like thylacine.

The Australian continent was also the home of the platypus and the echidna with the result that a third mammalian sub-class had to be formed, these egg-producing creatures satisfying other mammalian criteria (which had now been expanded beyond the mere mechanics of reproduction).

Tasmanian Mammals

Tasmania's indigenous fauna provides examples of all three mammalian sub-classes: (i) Prototheria, represented by *Ornithorhynchus anatinus* (platypus) and *Tachyglossus setosus* (an endemic species of echidna); (ii) Metatheria, represented by 19 species of marsupials of which seven are endemic; (iii) Eutheria, represented by 5 species of native rodents and six species of bats. An important distinction between Tasmania and continental Australia is the absence, in this island, of two eutherian predators: the dingo, widespread in Australia when the first white settlers arrived, and the fox, introduced by the settlers there in the nineteenth century.

Marsupial Characteristics

The term marsupial is applied, in general, to animals which, after bearing young in an immature state of development, suckle the offspring in a pouch. Thus the young of marsupials, from conception, may be traced through two stages: (i) gestation; (ii) pouch life; in the case of the Tasmanian devil, for example, gestation is about 31 days and the pouch life about 4½ months.

In the larger marsupials, for example the kangaroo, the new-born are small and poorly developed, except for the fore-limbs which are proportionately very large and tipped with strong claws; the hind legs at this stage may be only embryonic buds. The young are about an inch in length, naked of fur, blind and with ears hardly visible. The female kangaroo, at parturition, sits with her tail brought forward between her legs and spends some of her time scratching at her pouch and licking it. When the offspring emerges from the cloaca, it climbs by its clawed fore-limbs into the pouch and reaches the teats, one of which it eventually fastens to with its mouth.

The tip of the teat expands within the mouth so that the young kangaroo cannot be released without rupturing the sides of its mouth and, for a start, the body grows without any corresponding increase in the size of the mouth. The end of the offspring's pouch life draws near when it is freed from the teat; it then begins to eat vegetation by leaning from the pouch when the mother herself is feeding.

The pouch itself exhibits considerable variety, opening downwards or backward in some marsupials, or forward or upwards in others; the kangaroos, for example, which rest in a sitting position, have pouches opening upward. The period of dependency of offspring does not necessarily end when the young leave the pouch. For example, young bandicoots live on in the mother's nest until they are able to look after themselves.

Isolation from Mainland

About 30,000 years ago, a great increase in the volume of world ice caused shorelines to fall hundreds of feet below their existing level. Eventually the melting of this ice reversed the process and a slow, great flooding began, one result being the formation of Bass Strait and the isolation of Tasmania as an island. By interpolation on recently published curves for world sea level changes, this event dates back about 11,000 years.

Because of this land link in comparatively recent times (in terms of the geological time scale), it is not surprising that Tasmania should have few endemic marsupials. The two most quoted examples are the Tasmanian tiger and the Tasmanian devil (*Thylacinus cynocephalus* and *Sarcophilus harrisii*) but allied species are known to have lived in continental Australia, despite the fact that they were extinct there before white settlement began. It is true that, putting aside the tiger and the devil, there are five other endemic marsupial species but these are closely related to corresponding continental species. All Tasmanian marsupials are indigenous with one exception; the exotic species is the sugar glider or flying possum, *Petaurus breviceps*, Victorian specimens having been brought to the island in the period 1835-1837 as pets, only to escape and take to the bush.

Arrangement of Species

The pouched mice, native cats, Tasmanian tigers and Tasmanian devils all belong to the family *Dasyuridae*, a group of the superfamily *Dasyuroidea*. However, the grouping of the Tasmanian marsupial species in the sections that

follow is not made in conformity with any scientific principle but is based, in the main, on the common names of the animals (e.g. 'possum' as a heading covering five species, the nexus being the fact that the common name of each contains the word possum).

The Major Carnivores

(1) *Thylacinus cynocephalus*

The Tasmanian Tiger apparently earned this title from the 13-18 stripes on the rump but the animal is much more akin to a very large dog or wolf if an analogy must be sought. The tail is long, rigid and slightly compressed laterally. Thylacines of up to six feet total length have been known.

Thylacines are carnivorous animals and naturally turned to sheep killing in the days of early settlement; from 1888 the government paid a bounty of \$2 per head for them and they were vigorously hunted up to the turn of the century. From about 1914 the species became very rare whilst today, for all practical purposes, the animal is extinct. Reported sightings still are investigated from time to time and the discovery of pad marks and other evidence have revived hope that the species may still exist; for many years now, however, no capture has been made. To most Tasmanians, the tiger is only a picture in a book but some of the older generation had the opportunity of seeing live specimens in a Hobart zoo in the 1920s.

(2) *Sarcophilus harrisi*

The early settlers were unable to adequately compare this animal with anything in their experience and therefore coined the name Tasmanian Devil; the head, equipped with massively strong jaws, is large and broad at the base and this makes the hind quarters appear relatively weak and out of proportion. The devil is black with white chest, shoulder and rump markings although occasionally all-black specimens are found.

Unlike thylacine, the devil is still very common, particularly on the west coast and in the north-east, and is spreading into other areas where it had not been seen in living memory. The animal is carnivorous and not fastidious, so in disposing of prey or carrion it eats the lot—skin, fur or feathers, and intestines; its sight is better adapted to night hunting and is defective in daylight.

March is the main breeding month and three or four young are born after a gestation period of about 31 days. The offspring are then reared in the pouch for about 4-5 months. It has been observed that, in captivity, the male eats the young; possibly in the natural state, the male is driven from the den when offspring are being reared.

(3) *Dasyurus maculatus*

Tiger Cat is not a happy choice of name for this animal; the head is most 'uncatlike', resembling more that of a weasel or similar species and its characteristic spots, on body and tail, are most 'untigerlike'. Possibly the tiger prefix is a tribute to the creature's reputation as a courageous and fierce fighter. Specimens of up to four feet in length have been recorded; the animal is usually dark brown in colour although black varieties are common. It is a good tree climber and can therefore rifle birds' nests but it preys also on small mammals and reptiles, with poultry yards as occasional targets.

The main mating months are June-July, with gestation lasting about three weeks. The tiger cat's pouch contains six nipples in which four to six

offspring are reared for a further three months. The species is widely distributed in the eastern States from mid-coastal Queensland to Tasmania; within the island, it is widespread but not as common as the native cat.

(4) *Dasyurus quoll*

The Native Cat (*D. quoll*) has a spotted body but not a spotted tail, and this is the easiest way of distinguishing it from the Tiger Cat (*D. maculatus*); in general, it is smaller and less fierce than the latter. Specimens range in colour from sandy through olive-grey to black, but the lighter spots are always present.

The main breeding months are from late May to early August and 20 to 25 embryos may be born, of which only six have a chance of living by attaching themselves to nipples within the pouch. The species is widespread in the eastern States from N.S.W. to Tasmania; it occurs also on King Island.

Possums

(5) *Trichosurus vulpecula*

The Brush Possum is not so exclusively arboreal as the ringtail and spends some of its time on the ground. Its long, bushy, prehensile tail has the inner surface naked at the end and this helps distinguish it from the ringtail which has a tail covered by short hair and marked by a prominent white tip. In general, Brush Possums are larger than ringtails and range in colour from grizzled grey through rufous brown to black, the underside being invariably lighter; the black specimens are usually found in the wetter parts of the island. Cream or silver colouring has occasionally been recorded.

The female breeds twice a year, March and August being the main months, and the gestation period is 16 to 21 days. Since the offspring, usually one or sometimes two, remain in the pouch for five months, female brush possums taken at any time of the year are likely to be carrying young. The species is widespread throughout Tasmania and found also in other eastern States.

(6) *Pseudocheirus convolutor*

The Ringtail Possum can be distinguished from the brush possum by its tail (see previous section), and varies in colour from dark grey to dark brown or even black. More strictly arboreal than the Brush Possum, it is widespread in Tasmania but is thought to suffer severely from natural population cycles; the numbers fell off greatly about 1951-52 and have been slow to recover. The ringtail lives in most types of country except plains and possibly rain forest. Eucalypt leaves and young shoots form the main item of food; if it raids an orchard, the ringtail will attack young shoots.

Young are found in the pouch during most months of the year, but especially in winter. Gestation may result in the birth of as many as six young but only two can survive (the pouch contains four teats but only two are functional). The species is found also in the Bass Strait islands but not on the mainland of Australia; however, a related species lives there.

Ringtail and Brush Possums are hunted for their skins but are partially protected by short game seasons (or total prohibition for a year or series of years, as for the ringtail). Other species given the name possum are described in the following sections.

(7) *Cercaertus nanus*

The pigmy Possum (*C. nanus*) is less than six inches in body length and is hard to distinguish from an allied species, *C. lepida*. The ears of *nanus* are broader and larger, and *lepida* is the smaller in body length, the snout-rump length being less than three inches. One peculiarity of both species is a swelling of the tail at the base, especially in autumn, due to the deposition of fat.

The pigmy possum makes a nest in the bark of trees and lives on nectar, blossom and insects; it hibernates for a period in winter. The species occurs also in the eastern States as far north as south-east Queensland and in S.A. but little is known of its Tasmanian distribution; Tasmanian specimens have been recorded at Cullenswood in the north-east and Franklin in the south.

(8) *Cercaertus lepida*

The Little Tasmanian Pigmy Possum (*C. lepida*), on superficial examination, appears to be a diminutive of *C. nanus* but there is sufficient differentiation to label it as a separate species. Specimens have been caught in places as widely separated as Tyenna and Port Davey in the south and near Launceston in the north. The species is confined to Tasmania.

(9) *Petaurus breviceps*

The Sugar Glider, often called the flying possum, is readily distinguished by the beautiful, soft, dove grey fur and by the presence of the gliding membrane which runs down the side of the body. The tail is long and bushy with a dark tip. A dark stripe runs along the head and down the back. The species is not a native of Tasmania and was introduced from Port Phillip into the north by travellers who had made pets of the creatures in the period 1835-1837.

The creature lives on insects, fruits, buds and blossoms, and the female bears two offspring each season, usually in June or July. It is now widely distributed in Tasmania and is found in the eastern States of Australia, and even in the Northern Territory.

Pouched Mice

(10) *Antechinus swainsonii*

The Dusky Marsupial Mouse is dark brown in colour with a lighter belly; it has small ears and white on its tail which is hairy and almost as long as the body. The relation of tail to crown-rump length establishes the distinction between *A. swainsonii* and *A. minimus*; in the former species, the tail is shorter than this length, in the latter, longer. The snout-rump length is known to be as great as six inches in *A. swainsonii*.

Eight or nine young are born in July or August and are carried in an incomplete pouch for some seven to eight weeks; the offspring then commence nest life when their eyes open and their fur has developed. The species has been recorded at Maydena, Orford, Nietta, Lake St Clair, Dromedary and Sandy Bay but, due to its habits, it is rarely encountered. There are two races of this species, the one confined to Tasmania and the other occurring in the highlands of Victoria and N.S.W. The mainland race has thinner fur and the underside is dark brown with a red-yellow tinge.

(11) *Antechinus minimus*

The Little Tasmanian Marsupial Mouse can be distinguished from *A. swainsonii* by the tail relationship described in the previous section; in general, *A. minimus* is a smaller species and is characterised by a blunter face. The species is confined to Tasmania and the Bass Strait islands.

(12) *Sminthopsis leucopus*

The Whitefooted *Sminthopsis* has a very sharply pointed snout, white feet and a white hairy tail, tufted at the tip. The body is dark grey to black, but the snout and ears are fawn colour. The species is rarely encountered but is distributed in the eastern States from Victoria to south Queensland; recent specimens have been recorded at Hawley in northern Tasmania and at Orford in the east.

Bandicoots

(13) *Perameles gunnii*

The Barred Bandicoot is easily recognised by having four or five dark bars across the rump; the tail is short, the snout long and the ears are almost rabbit-like. The colour is light whitish fawn, the bars are dark brown and the tail and undersurface near white. The animal lives in open country and lightly timbered areas in nests constructed in grass tussocks; its main food is vegetable matter and insects.

Three or four young may be born at any time of the year and the pouch has eight teats. The period of immaturity is spent first in the pouch and later in the nest. The species is widely distributed in Tasmania in suitable country but is not found in continental Australia; it closely resembles a mainland species, the Eastern Barred Bandicoot, *P. fasciata*.

(14) *Isoodon obesulus*

The Short-nosed Bandicoot is usually light brown, coarse-haired and near white underneath; the tail is short, thinly furred and somewhat scaly. The absence of dark bars on the rump easily distinguishes it from *P. gunnii*.

This animal tends to live in thick scrub country where it makes a nest of twigs, leaves and earth to blend with the surroundings; it is mainly an insect eater and digs after its prey. It is a hopper, rather than a walker, moving both hind feet simultaneously and is chiefly nocturnal in habit.

The main breeding season is in June and July, with four offspring as the usual outcome. The pouch has eight nipples and the young, after leaving the pouch, live on in the nest. The Short-nosed Bandicoot is widely distributed not only in Tasmania but also in the eastern States.

Wallabies and Kangaroos

(15) *Wallabia rufogrisea*

Bennett's Wallaby has a long face and long ears; the tips of the ears and the end of the snout are dark. The usual colour is reddish brown with a grey undersurface, though grey and dark individuals are common. The back is often greyish. This species can be distinguished from the pademelon (*Thylogale billardieri*) by the foot length: between 150 and 250 mm in the wallaby, but under 150 mm in the pademelon; another difference is that the pademelon's face and ears are much shorter and the snout blunter.

Bennett's wallaby inhabits relatively open country (when compared with the pademelon which prefers the thicker scrubs) and is often wrongly called a kangaroo. The main breeding months are January and February, gestation lasting about 40 days. One young is usually carried though twins are not uncommon and triplets have been recorded. Life in the pouch is very prolonged and the young do not leave it before November or December. The species is very widely distributed in Tasmania in open savannah woodlands, coastal

scrub, sclerophyll forest and on the fringes of pastoral clearings. A species of the same name (*W. rufogrisea*) is found in continental Australia but the mainland wallaby is larger in size and has a shorter coat. The Tasmanian animal is sometimes referred to as *W.r. bennetti*.

(16) *Thylogale billardieri*

The Pademelon is usually called a wallaby but the previous section gives the way of distinguishing it from a true wallaby; its colour can be one of many shades of brown, with dark reddish brown the most common. The ventral surface tends to be yellow-brown or reddish.

Breeding takes place in the summer but young may be found in the pouch throughout the year; only one young is usually carried. The animal is widespread in Tasmania, preferring the thicker lower scrubs for its habitat.

(17) *Macropus giganteus tasmaniensis*

Tasmania has only one species of kangaroo, the Forester Kangaroo, and it can be easily distinguished by its size, often five feet or more in height. The colour is grizzled grey and the fur is rather coarse; the nose is hairy.

The main mating month is December, the gestation period lasting about 40 days. Life in the pouch is very prolonged and the young quit it after about ten months. The Forester kangaroo was once very widespread in Tasmania but is now confined to the north-east and east; it is a wholly protected species. The species *Macropus giganteus* is widely distributed in continental Australia and *tasmaniensis* is a sub-species.

Rat Kangaroos

(18) *Bettongia cuniculus*

The Bettong is the largest of the rat kangaroos and superficially resembles a small wallaby; the easiest distinguishing feature is the tail, which in the Bettong, is laterally compressed and usually white-tipped. Another animal it resembles is the Potoroo and in this comparison, the basic relationship is between hind foot and head; in the Bettong, the hind foot is longer than the head but, in the Potoroo, the hind foot is shorter.

The face of the Bettong is shorter than that of the Potoroo and the animal ranges in colour from sandy to dark brown, with the undersurface lighter. The species is widely distributed and lives on the fringes of forests or in lightly forested areas, as compared with the Potoroo which prefers low thick scrub and the fringes of rain forests. Bettongs are nest builders, using bark or grass, and eat mainly roots; favourite sites for nests are hills exposed to the sun, with light timber and grass cover.

The breeding season is long, from at least March to December, and the gestation period is about six weeks; the one young spends about four months in the pouch although twins are sometimes carried. The species is confined to Tasmania and is sometimes known as the Tasmanian rat kangaroo.

(19) *Potorous tridactylus*

The Potoroo can be distinguished from other macropods by the hind foot being shorter than the head; the snout provides an alternative name, long-nosed rat kangaroo. The usual colour is dark brown, with the under-surface greyish brown. The animal avoids open country and inhabits thick scrub where its diet is mainly roots.

The gestation period is about 35 days, when one young is born; it then lives in the pouch for about 135 days. The pouch contains four nipples and young may be found in the pouch of captives taken at any time of the year. The Potoroo is widely distributed in Tasmania and was once common in the eastern States but is now believed to be almost extinct there.

Wombats

(20) *Phascolomys ursinus*

The Wombat is often called a badger, on account of its robustness and burrowing habits, but it far excels the true or placental badger in strength and in ability to dig deep tunnels with great rapidity. The animal is squat and bear-like in shape, powerfully built and with a very small tail. The usual colour is brown though grey and buff variations occur.

The animal usually lives in a burrow, though caves or piles of rocks may also serve for a den; it feeds on herbage and grasses and prefers open forest country or rocky areas, from sea level to as high as 3,000 feet. It avoids thick rain forest, probably to get freedom of movement. The wombat family is widespread in Tasmania and on the Australian continent, but its reproductive habits are not completely known; the young, usually a single individual, is born in the autumn, but there are two nipples available for suckling.

Protection Policy

The preservation of the State's indigenous animals is a major aim of the Animals and Birds Protection Board and, under State legislation, species may be declared wholly protected or partially protected. Wholly protected marsupial species include the pouched mice, the pigmy and flying possums, the native cats, the Tasmanian Tiger and Devil, the bandicoots, the Forester Kangaroo, the Bettong and the Potoroo.

The Brush Possum and the Ringtail Possum are partially protected species, the animals being hunted for their skins; 'partially protected' means that the Board can nominate the opening and closing days for the hunting period, or alternatively keep the season closed for years at a time. The main consideration is the survival of the species and, due to low ringtail numbers, there has not been a season declared for some time. The two wallabies, Bennett's and the Pademelon, are also partially protected, the question of open or closed seasons being a little more complex; not only are they hunted for skins and meat but, if allowed to thrive on the fringe of settled areas, they become a pest, attacking farmers' crops and competing with farm animals for the grass and herbage on pasture lands. Periodic extermination campaigns are undertaken as evidenced by the annual Avoca wallaby shoot. The wombat is not protected but the survival of the species is assured; the animal, being a burrower, is something of a nuisance on farm properties but is not hunted for skin or meat in the bush and few would destroy this harmless, attractive creature without good reason.

In addition to the protection measures just described, there are, of course, national parks and game sanctuaries where no hunting or destruction is allowed at any time of the year.

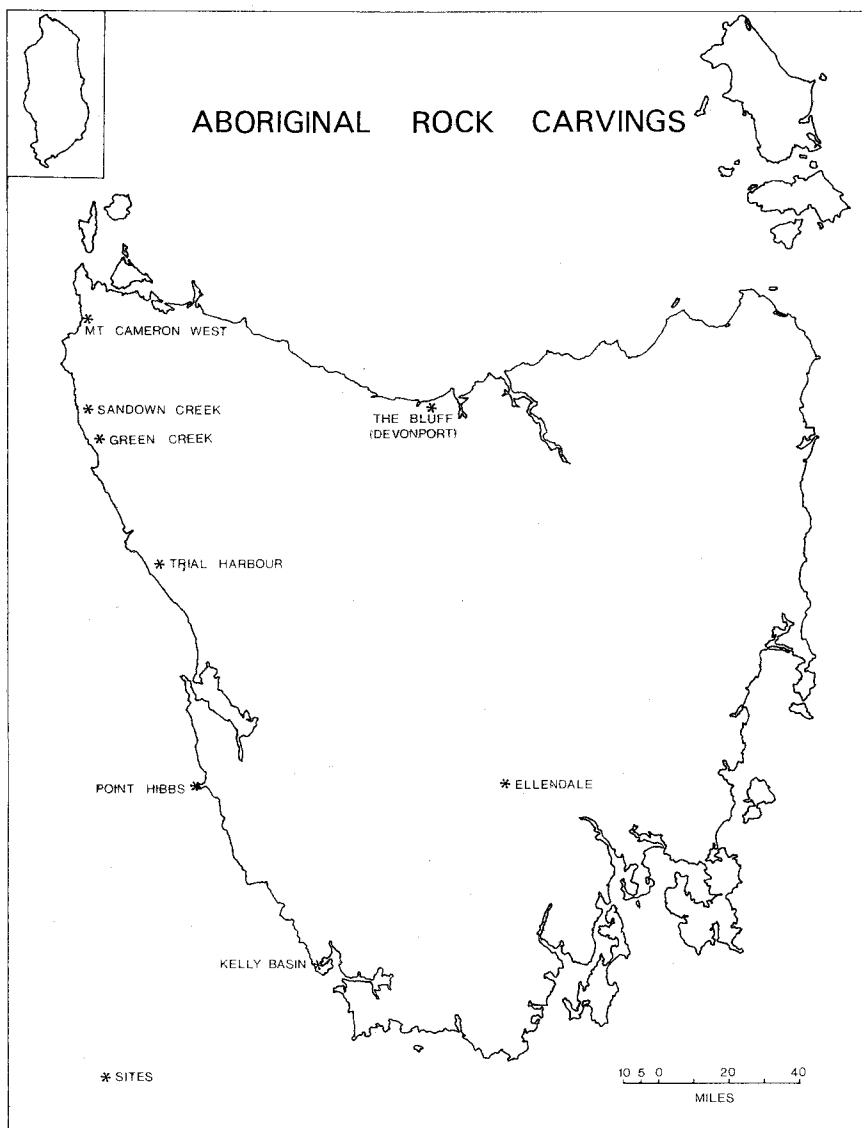
In the 1969 season, the number of skins taken by hunters was: possum, 133,848; Wallaby, 26,903; Pademelon, 39,451. The police, who issue hunters', sellers' and dealers' licences, obtain a count of skins from royalty payment collections.

(Further reading: (i) *Marsupials of Tasmania*, author Dr E. R. Guiler, booklet of Tasmanian Museum and Art Gallery. (ii) *Marsupials*, article in *Encyclopaedia Britannica*.)

TASMANIAN ABORIGINAL ROCK CARVINGS**Introduction**

The first account of the existence of any form of aboriginal art in Tasmania was in the writings of Peron (naturalist on the *Geographe* which visited the island in 1802). He reported seeing bark carvings on aboriginal burial mounds. Further references to such art forms have appeared since Peron, a notable example being from G. A. Robinson as a result of a visit to the West Coast in 1831.

In respect of the existence of rock carvings however, until the 1930's it was generally assumed that no such form of pictorial art had been achieved by the Tasmanian natives.



Devonport

The Bluff

Early in 1931, Mr A. L. Meston M.A. investigated the cliff faces of a rocky headland known as 'The Bluff' at the mouth of the Mersey River, Devonport. He discovered approximately 75 carvings which he measured and photographed. The rock-type is diabase (a hard refractory material) into which some of the engravings had been deeply incised while others were little more than lines. The effect of weathering has since destroyed many of them. Some seemed to Meston to depict natural objects (fish, snake, bird's head, leaf) whilst others were merely signs such as ovals, circles, concentric circles.

Protection of Carvings

Archaeologists are concerned at the lack of protection for the carvings and consider that some kind of enclosure should be erected to prevent people walking and driving over the particular rocks. Natural damage from erosion has been extensive; now only 30 separate carvings are identifiable, whereas Meston had observed 75.

Copies of the remaining carvings are being made for the Australian Institute of Aboriginal Studies in Canberra with a view to interpreting their symbolic nature.

Mt Cameron West

Historical

The most significant discovery of aboriginal carvings was made on the West Coast at a site two miles north of Mt Cameron West and ten miles south of Cape Grim. According to local inhabitants, stockmen had known of their existence since the middle of last century. In the late 1920's, a shepherd employed by the Van Diemen's Land Company noticed the markings, but it was not until December 1931 that Meston and his party (which included Mr K. M. Dallas) visited the area and photographed the carvings. Meston later revisited the site accompanied by Messrs Pearson (the director of the Tasmanian Museum) and Tindale (from the S.A. Museum).

No further work on the site was achieved until 1950 when a party consisting of Mr and Mrs L. Luckman, Professor and Mrs W. D. Jackson and Mr W. F. Ellis excavated the site. By removing thick vegetation and tons of sand, many more carvings (or 'petroglyphs') were uncovered. These were photographed, then outlined in chalk or charcoal and photographed again. The Luckman party realised that the carvings, being in particularly soft sandstone (known as aeolianite), were being rapidly eroded by wind, rain and sand. One of the largest slabs, which Meston had photographed in 1931, was by now broken into three pieces, one of which had disappeared. It was decided to remove the remaining two pieces to the Queen Victoria Museum. Scale drawings of all engraved slabs were made by Dr Jackson and are also held at the Museum.

The question of preservation of the petroglyphs was taken up by the Tasmanian Museum in 1955 and a good deal of time and effort was devoted to the problem. The area is exposed to the full blast of the west winds which are often very strong. Sand covers the rocks and as it is mostly wet from constant rains, it leeches out the calcareous binding and rots the rock. Roots from plants were also penetrating and cracking the rock.

Various suggestions have been made for preservation, such as the provision of a wind shelter on the west side and covering the surfaces with some

bonding material, but after careful thought and examination these and other suggestions were ruled out because of the difficulties inherent in each suggestion.

With the permission of the Van Diemen's Land Company, two engraved slabs were removed to the Tasmanian Museum in 1962 and installed in the Aboriginal room. The Australian Institute of Aboriginal Studies sent Mr D. J. Mulvaney (A.N.U.) to inspect the site in 1962. He deplored the damage and favoured protection *in situ*. The Institute, with the agreement of the Van Diemen's Land Company and the Scenery Preservation Board, approached the Tasmanian Government to have the site declared a national monument, but without success. Also, a Tasmanian Committee of the Institute was set up in 1963 to prevent further damage to the site and to promote archaeological research on scientific lines in Tasmania.

In 1965, Mr W. C. Wentworth, M.H.R. and Mr F. Ellis (Director of the Queen Victoria Museum) who had studied the site for some years, recommended protection *in situ*, but a party of archaeologists representing the A.I.A.S. recommended removal of the main engraved rocks to Marrawah or Smithton, and this suggestion was supported by a meeting of the Institute's Tasmanian Studies Committee.

Arising from an application from the Tasmanian Museum to investigate the site in February 1968 the Institute obtained a report from archaeologists, D. J. Mulvaney (A.N.U.), Rhys Jones (University of Sydney) and H. Lourandos (Tasmanian Museum), who did not consider it essential to attempt the total removal of the rocks to Hobart. They recommended study of the art, excavation of midden deposits to establish antiquity of site, moulding engravings and survey of the site. This investigation, financed by the Institute, was carried out in co-operation with the Tasmanian Museum in February 1969 by a party of archaeologists, a biologist, and surveyors. The excavations produced charcoal samples at various levels for radio-carbon age determination of the site, and revealed engraved rocks within or covered by the midden. The positions of all exposed rocks were surveyed, while tracings on polythene sheets, and photographs were made of each decorated surface. Moulds were made of half-a-dozen engraved surfaces and the others are to be done in the near future. Fibre-glass casts made from these moulds produce perfect copies of the art. (One of these has been placed in the main entrance hall at the State Museum, whilst another is located at the Institute in Canberra). The main site is extensive, the engraved rocks being buried in the sand over a distance of some 100 yards. Only the exposed section was examined. A monograph on this investigation is in preparation by the Institute. Further surveys of the site are envisaged.

Description

Most of the engravings are on the northern outcrop of rock, a few on the southern outcrop; a third series (including bird tracks) a quarter of a mile up the southern ridge, is normally covered by several feet of sand. Some on the roof of a rock shelter are out of reach of a man.

The principal motifs include circles (plain, tailed, concentric, barred, paired and multi-linked circle designs) grids, parallel bars, parallel rows of pits, and elaborate combinations of them. One kangaroo and a few bird tracks are present. Outstanding features are large rocks engraved on two and three faces, the great depth and width of the grooves, framing of decorated surfaces by a groove or flat shelf, and the sculptural qualities of the art. Some of the motifs occur in the Linear Design phase of engraving on the mainland, others are unique to the Mt Cameron West site. The site is a national treasure and preservation of the engravings is an urgent problem.

Other Sites

Trial Harbour

In 1937, J. F. Jones reported the discovery of engravings on a large boulder of granite, a quarter of a mile north of Trial Harbour. They consist of about a dozen rings, 6-15" in diameter, the incisions themselves being about 1½" wide. Arcs of other circles are also visible, the remainder having been weathered away.

Kelly Basin

In a visit to the Port Davey area in 1950, O. T. Reid found markings believed to have been made by aboriginal artists. They were located near the entrance to Kelly Basin on the north-west side of Bond Bay. The markings consisted of parallel rows of indentations reminiscent of the Mt Cameron West carvings, though at a lesser stage of completion.

Other Sites

The above-mentioned engravings, together with others similarly dominated by circular designs (at Sandown Creek, Green Creek and Point Hibbs) are accepted by archaeologists as aboriginal work.

Markings were also observed by Reid on the Tasman Peninsula and near the junction of the Broad and Derwent Rivers. These consist of deep, smooth curvilinear grooves and are not considered by archaeologists to be of human origin.

Ellendale

In 1958, Messrs W. Bryden and S. de Teliga of the Tasmanian Museum investigated a report of the existence of aboriginal art in a sandstone cave, six miles from Ellendale on the banks of the Derwent. A number of outlines in red of human hands were observed, but these are now covered by water in a dam. The Museum considers it might be worthwhile making a detailed investigation of other caves along the Derwent.

MARIA ISLAND

Introduction

Maria Island, lying little more than three miles off the eastern coast of Tasmania, has experienced a long and diverse history. Now a haven for fauna, some of which is extinct or close to extinction on the Tasmanian mainland, Maria Island has twice been a penal settlement. At other times sheep were run, limestone quarried, and wine and cement produced.

The island covers some 23,900 acres and consists of two well defined islands connected by a long and narrow isthmus. It is separated from Tasmania by the relatively shallow Mercury Passage, an easy crossing for small boats, once the only means of access. The relative isolation of the island has been relieved by the recent opening of an air-strip for light aircraft.

Topographically, the north and south islands are quite dissimilar. The south island consists mainly of relatively low land on the western side rising to a 1,000 foot high central point. A spur of high land forms the spine of the southern peninsular terminating at Cape Peron. In contrast, the northern island is dominated by a steep and rugged central ridge with the peaks of Mount Bishop and Clerk (about 2,000 feet high) in the north and Mt Maria (2,329

feet), towards the centre. Other parts of the north island vary from undulating, relatively flat land to precipitous slopes and rugged, exposed headlands.

History

The history of Maria Island has been greatly varied since its discovery by Abel Tasman in 1642, and falls into seven distinct periods.

1642-1825

Tasman's discovery of Maria Island was followed by a period of some 130 years before the island was again seen by Europeans.

Captain Marion du Fresne is recorded as having sighted the island during his voyage of 1771-1773 as did Tobias Furneaux in *Adventure* when accompanying Cook on his second voyage of exploration in 1773.

In 1789, Captain John Henry Cox in the brig *Mercury* landed on Maria Island in search of fresh water. The landing was made in a deep, land-locked and sheltered bay which Cox named Oyster Bay. Mercury Passage, between the island and the mainland was named after his vessel. He was followed by Captain Nicholas Baudin who anchored near the entrance of Oyster Bay on 18 February 1802. While at anchor Baudin sent off four boat parties to explore the surrounding land and one party was given the mission of seeking fresh water and mapping Maria Island.

Tasman had reported seeing only the signs of human occupation, but both Lieutenant George Mortimer, travelling with Cox, and Baudin's zoologist, Francois Peron, wrote accounts of their meetings with the native people.

Mortimer observed that the natives were '... a timorous, harmless race of people, and afford a fine picture of human nature in its rude and uncultivated state.' He also noted that although lean, they were generally well built and muscular. In contrast, Peron thought the aborigines thin and weak, and described them as being distrustful and treacherous.

The Aborigines have left few traces of habitation. Their huts and shelters were primitive, crude affairs. Their culture, which has been placed at no higher than the equivalent of Upper Mesolithic, appears to have made little progress beyond the hunting and fishing level of a subsistence economy, associated with a good deal of seasonal movement in pursuit of food.

Fire was commonly used by the Aborigines and this is perhaps the most significant factor of their occupation of the island. There can be little doubt that the frequency and extent of bushfires increased as a result of their domestic fires, and indeed some may have been lit deliberately to facilitate hunting. This is likely to have had a considerable influence in modifying the vegetation and probably the pattern of water run-off over the drier parts of the island.

Although the fate of these Aboriginal inhabitants is not recorded it would seem their disappearance occurred in the period 1800-1825 and can, therefore, probably be linked with the whaling and sealing activities which flourished on the island in this period.

During his voyage, Cox had secured about 1,000 seal skins while sailing towards Tasmania and thus unwittingly inaugurated the uncontrolled exploitation which led to the near extinction of seals in these waters and to the ultimate destruction of the indigenous inhabitants.

Sydney-based sealers and whalers are thought to have begun operations near Maria Island in the early 1800s. By 1803 the whalers were operating out of Hobart and a short time later a small sheltered inlet on the island called Whalers Cove was used as a bay-whaling station. The station was abandoned in 1825 and operations transferred to an inlet on the east side of the south island.

1825-1832

It was during this period that the first penal settlement was established on the north island at Darlington. In 1825, Lieutenant-Governor Arthur ordered the establishment of the settlement under Lieutenant Murdoch. The buildings erected at this time were impermanent structures, and no signs of any are visible today. Later, however, Lord, Lieutenant Murdoch's successor as commandant of the penal colony was given authority to erect a substantial building—the Commissariat Store—which still stands.

The settlement grew rapidly and soon numbered some 150-200 convicts with a military establishment of about 20. As a result of the settlement's activities the landscape around Darlington was quickly altered. The convicts were employed in diverse activities including land clearing, building, blacksmithing, shoemaking, tailoring, quarrying, weaving and making bricks and coarse earthenware. A mill-leaf, dam and storage area were constructed on Bernacchi's Creek. Clay-pits, stone and limestone quarries were developed.

Late in 1831, Lord reported the discovery of extensive limestone beds near Darlington but this was not considered to be of sufficient importance to prevent the abandonment of the settlement. The Port Arthur penal colony had been established in 1830 and was favoured as a more suitable location to Maria Island. In 1832, the island settlement was closed down and the convicts transferred.

During the period 1825-1832 many buildings were constructed, including various quarters and barracks, carpenter and blacksmith shops, lumberyards and schoolrooms.

1832-1842

The government leased Maria Island on a two-year tenure by bid at a public auction. A number of lessees occupied the land until 1839 when there was a misunderstanding on the amount of rental involved. Following disputes the government eventually resumed the land in July 1842.

1842-1851

Plans were made for a new convict settlement at Darlington in August 1842 and the following month the first shipment of 150 convicts was sent from Hobart. The old penitentiary was re-occupied and work started on new buildings.

By May 1847 there was accommodation for 730 men, a windmill and miller's cottage had been built to the north of Darlington and a large barn erected near the Commissariat Store.

In the same year 363 acres of land was cultivated at Darlington and a further 318 acres at Long Point where a second penal colony had been established with accommodation for 400 men. In addition to the land cultivation, 2,300 sheep were run on the island.

Agitation in Tasmania against transportation was having a marked effect by 1850 and the flow of convicts was greatly reduced. In 1851, Darlington was abandoned for the second time, followed by Long Point in 1852. When these settlements were relinquished, a total of 634 acres had been cleared: 414 acres at Darlington and the remainder at Long Point.

1852-1884

Maria Island was again offered for lease and brothers Hamlet and Melmoth Fletcher tendered successfully at an annual rental of £300, but in 1861 the Government again resumed the land. The island was re-advertised and Hamlet Fletcher bid successfully for a 14-year lease which soon after he sold to his brother. In 1868, Melmoth surrendered the lease and the island passed to Thomas Dunbabin who, with his brother John, ran 3,000 sheep, rearing about 500 lambs each year until March 1876. The next occupant, J. J. Butler, was able to maintain his lease for only two years after which Hamlet Fletcher resumed occupation until mid-1883.

In 1884, the assessment roll for Spring Bay Municipality listed Maria Island as untenanted.

1884-1930

While Maria Island's previous history involved convict settlement and sheep farming, the arrival in 1889 of Signor Bernacchi introduced a new phase of development which occupied most of the following 50 years.

Bernacchi wished to develop wine and silk producing industries on the island and following parliamentary legislation was given a lease under special conditions. Among other provisos, provided he spent £10,000 on development, Bernacchi was to be charged only a nominal rental of 1/- a year.

Within two years many changes had taken place in the Darlington area. A spacious hotel and a school were built, a baker, butcher, shoemaker, and a storekeeper set up business. Cultivations were re-established and vineyards planted to the north and south of Darlington, the dam and water supply were renovated. During this time the population quickly rose to 260 people.

The settlement prospered for a period but this early promise was followed by a decline and Bernacchi left Maria Island about 1895.

The Maria Island Land and Development Company operated in the period 1895-1900 and freeholds were obtained at the northern end of the island. Smaller freeholds were established along the western parts of the north island in that period. During the years 1920-25 freehold ownership spread and tenants occupied holdings on the isthmus and in parts of the southern island.

In 1920, Bernacchi was instrumental in the formation in Melbourne of the National Portland Cement Company, with the purpose of developing a cement industry at Darlington. The company was producing 30,000 tons of cement a year by 1924-25, utilising limestone from quarries east of Darlington and from Fossil Cliffs east of Cape Boullanger. But the project was not successful and by 1927 was incurring heavy losses. The company closed-down its Maria Island operation in 1930.

Post 1930

The abandonment of the cement industry was followed by a steady decline in the population of the island, a trend which has continued.

Industry returned to Maria for a short period in 1953 when limestone from the Counsel Creek area was quarried and shipped to Hobart. Transport costs proved prohibitive and in 1955 this business ceased operations.

In May 1965, the government agreed to an Animal and Birds Protection Board recommendation that Maria Island become the site for a National Fauna Reserve.

Chapter 3

GOVERNMENT AND ADMINISTRATION

GOVERNMENT IN TASMANIA

Historical Summary

In its short history, Tasmania has experienced diverse modes of government; beginning with autocratic rule, it graduated to responsible self-government as a British colony and finally surrendered some sovereign powers to take its place as an original State of the Australian Commonwealth.

The evolution of the system of bi-cameral responsible government within a Federal system falls into five distinct phases:

1803-1825: The island was part of the colony of New South Wales and its lieutenant-governors and commandants were subordinate to the Governor in Sydney.

1825-1851: On 14 July 1825, Van Diemen's Land was created a separate colony with a Lieutenant-Governor directly responsible to the Secretary of State in London. A nominated Legislative Council was established.

1851-1856: The passage of the *Australian Constitution Act* 1850 by the Parliament in London was followed by the establishment of a new Legislative Council in which sixteen members were elected and eight were nominees of the Lieutenant-Governor; the newly constituted Council first sat on 1 January 1852.

1856-1901: By the *Constitution Act* 1854, two houses of parliament, the House of Assembly and the Legislative Council were established, both houses being elected. The first Parliament sat on 2 December 1856 (the first year in which the island was officially called Tasmania); representatives of the Crown carried the title of Governor.

1901: The Tasmanian Constitution was limited by the establishment of the Commonwealth Constitution. (The *Commonwealth of Australia Constitution Act* 1900 granted legislative and executive powers upon certain specified matters to the Commonwealth Parliament and Government, some of them exclusively, and provision was made that, in the case of inconsistency of valid laws, the Commonwealth law should prevail.) In effect, the Parliament of Tasmania may make laws operative within the State upon all matters not within the exclusive power of the Commonwealth Parliament but, upon some of these matters, the Tasmanian law may be superseded by the passing of a Commonwealth Act.

Introduction

Government in Tasmania is exercised at three levels:

1. The Commonwealth, with authority based on a written constitution, and centred in Canberra.
2. The State, with residual powers, and centred in Hobart.
3. The Cities and Municipalities, with authority derived from State Acts, and operating in forty-nine subdivisions of the State.

This chapter deals primarily with the State Government and with Tasmanian representation in the Commonwealth Parliament. The administration of the cities and municipalities is described in Chapter 4, 'Local Government.'

Tasmanian Representation in Commonwealth Parliament

The Parliament of the Commonwealth of Australia consists of the Queen, a Senate and a House of Representatives. The Queen is represented in Australia by the Governor-General.

The Senate

The founders of the Australian Constitution had in mind that the Senate should give expression to the interests of the States as partners in the federation; in other words, the Senate should be a States' house. Accordingly the proportional representation suggested by the varying populations of the States was disregarded, and it was provided that each State should be represented by six senators; the first Senate in the first Parliament comprised thirty-six members of whom six represented Tasmania. The numbers remained unchanged until the *Commonwealth Representation Act* 1948 when each State became eligible to elect ten senators.

The founders also envisaged the Senate as a house of review and accordingly provided for continuity of membership by requiring only one-half of the Senate to retire every three years, and for each senator's term to be six years. If the normal pattern of three-yearly rotational retirement is broken by a double dissolution of both Houses, provision exists to elect a complete Senate with members divided into two equal classes: senators of the first class with a three-year term and senators of the second class with a six-year term. (The basis for this classification is the order in which the senators are declared elected.) After a normal rotational election, senators' terms commence from the following first day of July; in the case of an election for the whole Senate, terms commence from the first day of July preceding the election.

The House of Representatives

In designing the House of Representatives, the founders envisaged a legislative body representing the national interest and provided that the number of members chosen in the several States must be in proportion to population, but that no original State should have less than five members. The first House of Representatives in 1901 had 75 members of whom five were elected in Tasmania. The term of office was set as three years.

The *Representation Act* 1948 increased the Senate to 60 members and increased the House of Representatives to 123, although only 121 were elected from the States; the Northern Territory and the Australian Capital Territory each had one member with restricted voting powers only. At 1 January 1971, the House of Representatives stood at 125 members, 123 from the States and two representing the Northern Territory and the Australian Capital Territory respectively. Throughout the whole period since Federation, Tasmanian representation has remained constant at five members.

Electoral redistributions were undertaken soon after the 1947, 1954 and 1966 population censuses, the most recent being carried out by the Electoral Commissioners in 1968. The 1968 recommendations were accepted by the Federal Parliament and their net effect was to increase membership of the Federal House of Representatives by one to 125 members. The 1969 Federal House of Representatives election was the first Commonwealth election to be conducted in accordance with the new boundaries and subsequent to the election

State representation in the House of Representatives became: N.S.W., 45; Victoria, 34; Queensland, 18; South Australia, 12; W.A., 9; Tasmania, 5. The A.C.T. and Northern Territory each returned one member who has full voting rights.

The following table indicates the state of the House of Representatives at the election immediately following an electoral redistribution.

Membership—House of Representatives

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T. (a)	A.C.T. (b)	Total
1948	28	20	10	6	5	5	1	..	75
1949 (c) ..	47	33	18	10	8	5	1	1	123
1955 (c) ..	46	33	18	11	9	5	1	1	124
1969 (c) ..	45	34	18	12	9	5	1	1	125

(a) Representative in House since 1922; full voting rights granted 1969.

(b) Representative in House since 1949; full voting rights granted 1966.

(c) Election following an electoral redistribution.

Qualifications of Voters for Commonwealth Elections

An elector on a Federal roll is entitled and required by law to vote both in elections for the House of Representatives and for the Senate. An elector is any person, male or female, aged at least twenty-one years who is a British subject, who has lived in Australia for six months continuously and whose name appears on the roll. Residence in an electoral sub-division for at least one month is necessary to enable a qualified person to enrol. Enrolment is compulsory. All servicemen overseas irrespective of age can vote.

Qualifications of Candidates—Either Federal House

Qualifications necessary for membership of either House of the Commonwealth Parliament are possessed by any British subject, twenty-one years of age or over, who has resided in the Commonwealth for at least three years and who is, or who is qualified to become, an elector of the Commonwealth.

The term of office for a member of the House of Representatives is three years unless the House is dissolved earlier by the Governor-General.

Disqualification as Elector or Member

Grounds for disqualification as an elector include being of unsound mind, or being convicted and under sentence for offences punishable by imprisonment for a year or longer. Grounds for disqualification as a member of either House include these prohibitions and also the following: membership of the other House, being an undischarged bankrupt or insolvent, holding office for profit under the Crown (with certain exceptions), or having pecuniary interest in any agreement with the public service of the Commonwealth except as a member of an incorporated company of more than 25 persons.

Elections for the Senate

In Senate elections, there are only six electorates, each State being an electorate. Electors are required to cast a vote for every candidate standing within the State in order of their preference, and election of members is carried out in accordance with the principles of proportional representation by the

single transferable vote (see 'Elections for House of Assembly' for a description of similar electoral principles). If a vacancy occurs in the Senate, the appropriate State Government nominates a replacement who sits until the next Commonwealth general election (either for the House of Representatives or for the Senate), when an election is held to fill the vacancy. It is usual for appointed replacements to be of the same party as those they replace, although no law exists to require it.

If a senator fills a vacancy through an election held at the same time as an election for the House of Representatives, his term will be the same as if the vacating member's term were to run its full course. If the vacant seat is contested at an ordinary Senate election, then six, instead of five candidates, will be elected in the State affected and the senator last elected will fill the vacancy for a term shorter than the full six years.

The following table lists the senators for Tasmania together with party affiliation and year of retirement:

Senate—Tasmanian Members (a)

Senator	Party Affiliation	Retires in Year
Devitt, Donald Michael	A.L.P.	1971
Lacey, Robert Herbert	A.L.P.	1971
Lillico, Alexander Elliot Davidson	Liberal	1971
Marriott, John Edward	Liberal	1971
O'Byrne, Justin Hilary	A.L.P.	1971
Poke, Albert George	A.L.P.	1974
Rae, Peter Elliot	Liberal	1974
Turnbull, Reginald John David	Independent	1974
Wriedt, Kenneth Shaw	A.L.P.	1974
Wright, the Hon. Reginald Charles (b)	Liberal	1974

(a) See Appendix C (later information) for 1970 Senate election.

(b) Commonwealth Minister for Works and Minister in Charge of Tourist Activities.

Elections for the House of Representatives

The Commonwealth is divided into 125 single-member electorates and electors are required to cast a vote for every candidate standing within the electorate in order of their preference. Election of members is carried out in accordance with the principles of the absolute majority through use of the alternative vote (see 'Elections for Legislative Council' for a description of similar electoral principles). If a vacancy occurs in the House of Representatives, it is filled by holding a by-election in the electorate concerned. The last general election was held on 25 October 1969.

The following table lists the Tasmanian members of the House of Representatives together with the party affiliation and electorate of each member:

House of Representatives—Tasmanian Members

Member	Party Affiliation	Electoral Division
Barnard, Lance Herbert (a)	A.L.P.	Bass
Davies, Ronald	A.L.P.	Braddon
Duthie, Gilbert William Arthur	A.L.P.	Wilmot
Sherry, Raymond Henry	A.L.P.	Franklin
Solomon, Robert John	Liberal	Denison

(a) Deputy Leader of Federal Opposition.

Division of Power

Under the *Commonwealth of Australia Act* 1900, the State of Tasmania surrendered part of its sovereignty and it was possible, at that point in time, to classify the totality of powers to be vested in the Commonwealth and the State as follows:

1. Exclusive powers to be exercised by the Commonwealth alone.
2. Concurrent powers to be exercised both by the Commonwealth and the State (subject to the supremacy of Commonwealth law in cases of inconsistency of laws).
3. Residual powers to be exercised by the State.

Since the establishment of the Commonwealth of Australia, there have been considerable changes in functions actually performed by the two Governments due to constitutional amendments and to inter-governmental agreements affecting function. It will suffice, therefore, to list the main fields of activity of the Commonwealth Government today:

External affairs and diplomatic representation; maintenance of the armed forces; customs and excise; posts and telegraphs; control of broadcasting and television; control of civil aviation; repatriation of ex-servicemen; immigration; industrial arbitration for national industries; control of coinage and currency; overseas trade promotion; employment service; age, invalid and widows' pensions; national health benefits; federal territories and overseas dependencies; census and statistics; meteorological service; Commonwealth courts and police; control of banking; collection of sales and income taxes; housing assistance and war service homes; scientific and industrial research; management of State and National debt; lighthouses and navigation. (For a fuller treatment of this subject, the *Constitution* in Chapter 1 of the *Commonwealth Year Book* is recommended.)

The departments, authorities, etc. of the Tasmanian Government are listed in a later section of this chapter headed 'Administration'.

Governor

Introduction

Democratic forms of government exhibit great variety but, with regard to the selection and role of the head of State, two clearly conflicting concepts can be discerned. In the American tradition, the head of State is elected and must necessarily play an active role in party politics. In the British tradition, the head of State is the holder of hereditary office and is expected to be above and beyond party politics. Tasmania follows the British tradition and accepts as its Queen, Elizabeth the Second. Her Majesty appoints the Governor who acts as head of State, generally for a five-year term. The relationship existing between the Queen and the British Parliament is broadly the same as that existing between the Governor and the Tasmanian Parliament.

Authority

The Governors' authority is derived from Letters Patent (issued in 1900) under the Great Seal of the United Kingdom, from the Commissions of Appointment and from the Governors' Instructions issued under the Royal Sign Manual and Signet.

Powers and Duties

The Governor summons and prorogues Parliament; in special circumstances he may dissolve it after considering the advice of his Premier. Bills which have passed all stages in Parliament are submitted to the Governor for his assent although there are some subjects which are specifically reserved for the Royal Assent (e.g. a Bill granting land or money to the Governor). He opens each session of Parliament by outlining the legislative programme of the Government which, irrespective of its party affiliation, he refers to as 'My Government', but takes no other part in the sittings of either House.

His executive powers include the appointment of Ministers of the Crown, judges and other important State officers but not those whose appointments may be made by certain statutory corporations. By appointing Ministers of the Crown, the Governor creates the Executive Council of the day and he is required by his instructions to be guided by the advice of this body. Should he feel it necessary to act against the advice of the Executive Council, he may do so, but the reasons for such action must be immediately reported to the Queen. The Governors' relations with the Executive Council and with Cabinet are more fully discussed in the section headed 'The Cabinet and Executive Government'.

The Governor has the power to pardon, reprieve and remit sentences and fines. In capital cases, he is required to seek the advice of the Executive Council and, in other cases, the advice of at least one Minister. He also has the power to appoint a deputy to act in his stead during his temporary absence from the seat of government, whether within or outside the State. (In Tasmania, it is usual for the Chief Justice to act as Administrator of the Government in the absence of the Governor.) Further reference to the Governor's discretionary powers will be found under the section headed 'Dissolution of Parliament'. On all official State occasions, he performs the ceremonial functions as the representative of the Crown, and so becomes the focal point and the unifying symbol of the community.

Present Governor

All Tasmanian Governors since the first settlement have come from the United Kingdom, although Australians, in some other States and the Commonwealth, either hold or have held the vice-regal office. Lt-General Sir Edric Bastyan, a former Governor of South Australia, was sworn-in on 2 December 1968 as Governor of Tasmania succeeding Lt-General Sir Charles Gairdner whose term of office ended on 11 July 1968.

Lieutenant-General Sir Edric Montague Bastyan, KCMG, KCVO, KBE, CB

Born in England on 5 April 1903, married Victoria Eugenie Helen Batt 1944. Entered Sandhurst Royal Military College in 1921 at the age of 18. Graduated in 1923 with the rank of 2nd Lieutenant. Served with the Sherwood Foresters, 1923; West Yorkshire Regiment, 1935; Royal Irish Fusiliers, 1937; and the 53rd Welsh Infantry Division (TA) and Mid West District (Commander) 1952-1955. He saw active service in Palestine, 1938-1939; with the Eighth Army in Africa and Italy, 1939-1943; and in south-east Asia, 1944-1945. Post war service included a period as Major-General-in-Charge Administration, British Army of the Rhine, 1946-1948; Chief of Staff, Eastern Command, 1949-1950; Vice-Adjutant General War Office, 1955-1957; and until his retirement Commander, British Forces, Hong Kong, 1957-1960.

Sir Edric served as Governor of South Australia, 1961 to 1968, before taking office as Governor of Tasmania on 2 December 1968.



Sir William Thomas Denison

(State Archives)

'Highfield', home of Edward Curr

(Mercury)





Windermere Chapel, East Tamar

(P. Palmer)

Penitentiary, Port Arthur

(Dept of Film Production)





Limestone deposits, near Darlington, Maria Island

(Sir Ralph Wishaw)

Sandstone formation, Maria Island

(Sir Ralph Wishaw)



Honours

Another function of the Governor is the investing of all honours awarded to Tasmanians in the Queen's Birthday and New Year Honours Lists, except for knighthoods which are normally dubbed by the Governor-General in Canberra.

The following table lists Tasmanians who received honours in the 1970 lists.

Tasmanians Receiving Queen's Honours, 1970

Honour	Recipient
Knight Bachelor	Sir Marcus Gibson Sir Allan Walton Knight
Commander of the Most Excellent Order of the British Empire (CBE)	Mr Eustace John Cameron Mr Sinclair Jeavons Thyne
Officer of the Most Excellent Order of the British Empire (OBE)	Mr Donald Dean von Bibra Mr John Maurice Dillon Mr William Frank Ellis Mrs Marjorie Alice Collett Parker Mr Basil Stuart Sproule
Member of the Most Excellent Order of the British Empire (MBE)	Mr Luke Percy Cadden Heerey Miss Meysie Reeve Law Mr Clarence Gandy Pryor Mr Richard Athol Rowe, DCM Mr Allan Albury Salter Mrs Ivy Blanch Irene Smith Miss Cora Button Tucker Mrs Irene Lee Wolfhagen Mrs Margaret Adelaide Young
British Empire Medal (BEM)	Miss Cecily May Hannan
Queen's Police Medal (QPM)	Det-Insp. Eric Gordon Cole Mr John Alfred Rowland Gallaher

The Administrator

In the Letters Patent of 1900 (as amended in 1934), provision was made for a Lieutenant-Governor to administer the Government in the event of the Governor's death, incapacity, removal or departure from the State. Should there be no Lieutenant-Governor then appointed or should he be unable to act, the duties of the Governor were to be discharged by the Administrator. Attached to the Letters Patent was a Dormant Commission authorising the Chief Justice to act as Administrator 'in the event of the death, incapacity or absence of the Governor and the Lieutenant-Governor, if any'.

Lieutenant-Governors have often acted in lieu of the Governor but since 1943, it has been customary for the Chief Justice to act as Administrator in accordance with the provisions of the Dormant Commission which further nominates the next Senior Judge to act in the absence of the Chief Justice. (The last Lieutenant-Governor appointed was Sir John Evans, 1937-1943.)

The present Chief Justice is Sir Stanley Burbury, KBE, who has already acted as Administrator in the intervals between governorships, and on other occasions.

Succession of Governors

The next table shows the succession of governors from the time of Lieutenant Bowen's settlement in 1803. For the first 40 years, all appointed were officers of the navy, marines, or army, Sir John Eardley-Wilmot being the first civilian (in 1843). The title 'governor' was first used by Sir H. E. Fox Young, under whose administration the colony graduated to self-government.

The terms of office fall into four eras: (i) the governor directly responsible to N.S.W.; (ii) governor independent of N.S.W.; (iii) colonial self-government; and (iv) post-federation.

Succession of Governors, Acting Governors and Administrators from 1803

Name	Designation	Period
(i) 1803-1825		
Lieut John Bowen	Commandant	11. 9.03 - 16. 2.04
Colonel David Collins, R.M.	Lieutenant-Governor	16. 2.04 - 24. 3.10
Lieut Edward Lord, R.M.	Commandant	24. 3.10 - 8. 7.10
Captain J. Murray, 73rd Regt	Commandant	8. 7.10 - 20. 2.12
Major A. Geils, 73rd Regt (a)	Commandant	20. 2.12 - 4. 2.13
Colonel Thomas Davey, R.M.	Lieutenant-Governor	4. 2.13 - 9. 4.17
Colonel William Sorell	Lieutenant-Governor	9. 4.17 - 14. 5.24
Colonel George Arthur (b)	Lieutenant-Governor	14. 5.24 - 3.12.25
(ii) 1825-1855		
Colonel George Arthur (b)	Lieutenant-Governor	6.12.25 - 29.10.36
Lt-Col K. Snodgrass	Administrator	29.10.36 - 5. 1.37
Sir J. Franklin, KCH, R.N.	Lieutenant-Governor	5. 1.37 - 21. 8.43
Sir J. E. Eardley-Wilmot, Bart	Lieutenant-Governor	21. 8.43 - 13.10.46
C. J. La Trobe, Esq.	Administrator	13.10.46 - 25. 1.47
Sir W. T. Denison	Lieutenant-Governor	25. 1.47 - 8. 1.55
(iii) 1855-1900		
Sir H. E. Fox Young	Governor	8. 1.55 - 10.12.61
Colonel Thomas Gore Browne, CB	Governor	10.12.61 - 30.12.68
Lt-Col W. C. Trevor, CB	Administrator	30.12.68 - 15. 1.69
Charles Du Cane, Esq.	Governor	15. 1.69 - 28.11.74
Hon. Sir Francis Smith, CJ	Administrator	28.11.74 - 13. 1.75
F. A. Weld, Esq.	Governor	13. 1.75 - 5. 4.80
Hon. Sir Francis Smith, CJ	Administrator	5. 4.80 - 21.10.80
Lt-General Sir J. H. Lefroy, KCMG, CB	Administrator	21.10.80 - 7.12.81
Sir G. C. Strahan, RA, KCMG	Governor	7.12.81 - 28.10.86
Hon. W. R. Giblin, Esq. SJ	Administrator	28.10.86 - 18.11.86
Hon. Sir W. L. Dobson, CJ	Administrator	18.11.86 - 11. 3.87
Sir R. G. C. Hamilton, KCB	Governor	11. 3.87 - 30.11.92
Hon. Sir W. L. Dobson, CJ	Administrator	30.11.92 - 8. 8.93
Rt Hon. J. W. Joseph, Viscount Gorman- ton, KCMG	Governor	8. 8.93 - 14. 8.00

Succession of Governors, Acting Governors and Administrators—*continued*

Name	Designation	Period
(iv) 1900—		
Sir John Dodds, KCMG	Administrator	14. 8.00 - 8.11.01
Sir A. E. Havelock, GCSI, GCME, GCIE	Governor	8.11.01 - 16. 4.04
Sir John Dodds, KCMG	Lieutenant-Governor	16. 4.04 - 28.10.04
Sir G. Strickland, KCMG	Governor	28.10.04 - 20. 5.09
Sir John Dodds, KCMG	Lieutenant-Governor	20. 5.09 - 29. 9.09
Sir Harry Barron, KCMG, CVO	Governor	29. 9.09 - 8. 3.13
Sir John Dodds, KCMG	Lieutenant-Governor	8. 3.13 - 4. 6.13
Sir William Ellison-Macartney, KCMG ..	Governor	4. 6.13 - 31. 3.17
Sir Herbert Nicholls	Administrator	31. 3.17 - 6. 7.17
Sir F. A. Newdigate Newdegate, KCMG	Governor	6. 7.17 - 9. 2.20
Sir Herbert Nicholls	Administrator	9. 2.20 - 16. 4.20
Sir W. L. Allardyce, KCMG	Governor	16. 4.20 - 26. 1.22
Sir Herbert Nicholls	Administrator	26. 1.22 - 30.11.23
Hon. N. K. Ewing, Esq.	Administrator	30.11.23 - 13. 6.24
Sir Herbert Nicholls	Administrator	13. 6.24 - 23.12.24
Sir James O'Grady, KCMG	Governor	23.12.24 - 23.12.30
Sir Herbert Nicholls, KCMG	Lieutenant-Governor	23.12.30 - 4. 8.33
Sir Ernest Clark, GCMG, KCB, CBE ..	Governor	4. 8.33 - 4. 8.45
Sir John Morris	Administrator	4. 8.45 - 24.12.45
Admiral Sir Hugh Binney, KCB, KCMG, DSO	Governor	24.12.45 - 8. 5.51
Sir John Morris, KCMG	Administrator	8. 5.51 - 22. 8.51
Rt Hon. Sir Ronald Cross, Bart, KCMG, KCVO	Governor	22. 8.51 - 4. 6.58
Hon. Sir Stanley Burbury, KBE	Administrator	4. 6.58 - 21.10.59
Rt Hon. the Lord Rowallan, KT, KBE, MC	Governor	21.10.59 - 25. 3.63
Hon. Sir Stanley Burbury, KBE	Administrator	25. 3.63 - 24. 9.63
Lt-General Sir Charles Gairdner, KCMG, KCVO, KBE, CB	Governor	24. 9.63 - 11. 7.68
Hon. Sir Stanley Burbury, KBE	Administrator	11. 7.68 - 2.12.68
Lt-General Sir Edric Bastyan, KCMG, KCVO, KBE, CB	Governor	2.12.68 -

- (a) Originally the Launceston settlement had its own officials appointed from N.S.W. Lieutenant-Governor W. Paterson was followed, as Commandants, by Captain J. Brabyn and Major G. A. Gordon. The next, Captain J. Ritchie, took office on 1 July 1812 subordinate to Major A. Geils.
- (b) On 3 December 1825, Lt-General Sir Ralph Darling displayed in Hobart two commissions, one as Governor of N.S.W. and one as Governor of Van Diemen's Land. This was the device for separating Van Diemen's Land from N.S.W. Colonel George Arthur was sworn in again as Lieutenant-Governor on 6 December 1825.

The Cabinet and Executive Government

General

In Tasmania, as in the other States and the Commonwealth, executive government is based on the system which was evolved in Britain in the 18th century, and which is generally known as 'Cabinet', or 'responsible' government. Its essence is that the head of the State (in Tasmania, the Governor representing Her Majesty the Queen) should perform governmental acts on the advice of his Ministers; that he should choose his principal Ministers of

State from members of Parliament belonging to the party, or coalition of parties, commanding a majority in the popular House; that the Ministry so chosen should be collectively responsible to that House for the government of the country; and that the Ministry should resign if it ceases to command a majority there.

The Cabinet system operates chiefly by means of constitutional conventions, customs or understandings, and through institutions that do not form part of the legal structure of the government at all. In law, still, the executive power of the State is exercised by the Governor who is advised by the Executive Council which he himself has appointed and which meets for formal purposes, to be later explained. The whole policy of a Ministry is, in practice, determined by the Ministers of the Crown, meeting without the Governor under the chairmanship of the Premier, and this body is known as the Cabinet.

The Cabinet

This body does not form part of the legal mechanism of government and its meetings are private and deliberative. The actual Ministers of the day alone are present, no records of the meetings are made public, and the decisions taken have, in themselves, no legal effect. As Ministers are the leaders of the party commanding a majority in the House of Assembly, the Cabinet substantially controls not only the general legislative programme of Parliament, but the whole course of Parliamentary proceedings. In effect, though not in form, the Cabinet, by reason of the fact that all Ministers are members of the Executive Council, is also the dominant element in the executive government of the State. Even in summoning, proroguing or dissolving Parliament, the Governor is usually guided by the advice tendered him by the Cabinet, through the Premier, though legally the discretion is vested in the Governor.

In Tasmania, the present Cabinet consists of the nine Ministers of the Crown, including the Premier, most of whom hold more than one portfolio.

The Executive Council

This body is usually presided over by the Governor, the members thereof holding office during his pleasure. All Ministers of the Crown must be members of the Executive Council. Ministers actually remain members of the Executive Council on leaving office, but are not summoned to its meetings, for it is an essential feature of the Cabinet system that attendance should be limited to the Ministers of the day. The Chief Justice and Judges of the Supreme Court are also members of the Executive Council, but they too are not summoned to its meetings for the same reason. The meetings of the Executive Council are formal and official in character, and a record of proceedings is kept by the Clerk (who is the permanent head of the Premier's and Chief Secretary's Department). At Executive Council meetings, the decisions of Cabinet are (where necessary) given legal form, appointments made, resignations accepted, proclamations issued, and regulations and the like approved. The quorum required is three, comprising the Governor and at least two Ministers.

The Appointment of Ministers

Legally, Ministers hold office during the pleasure of the Governor. In practice, however, the discretion of the head of State in the choice of Ministers is limited by the conventions on which the Cabinet system rests. When a Ministry resigns, the Governor's custom is to send for the leader of the party which commands a majority in the lower House, and to commission him, as Premier, to 'form a Ministry'—that is, to nominate other persons to be appointed as Ministers of the Crown and to serve as his colleagues in the Cabinet.

The *Constitution Act* 1854 defined the Parliament of Tasmania as 'the Governor and the Legislative Council and House of Assembly together'. Although no legal requirements enforce it, the selection of all Ministers of the Crown from Parliament stems from the British tradition and sharply contrasts with the American system which requires its Ministers *not* to be members of Congress.

The Governor's power to revoke the appointment of a Minister of the Crown was exercised in 1959, the circumstances being that a Minister had refused to resign from Cabinet; in the absence of the Governor, and on the advice of the Premier, the Administrator terminated the Minister's appointment.

Present Ministry

After the elections held on 10 May 1969, the Ministry led by the Hon. W. A. Bethune, was announced as follows:

Ministry (since May 1969)

Name	House	Responsibility (a)
The Hon. W. A. Bethune ..	Assembly	Premier, Treasurer, Hydro-Electric Commission
The Hon. K. O. Lyons ..	Assembly	Deputy Premier, Chief Secretary, Tourism
The Hon. R. Mather ..	Assembly	Education
The Hon. W. G. Barker ..	Assembly	Lands and Works, Local Government
The Hon. E. W. Beattie ..	Assembly	Agriculture, Forestry
The Hon. E. M. Bingham ..	Assembly	Attorney-General, Police, Licensing
The Hon. D. F. Clark ..	Assembly	Development, Housing, Fisheries
The Hon. N. D. Abbott ..	Assembly	Health, Road Safety
The Hon. L. H. Bessell ..	Assembly	Transport, Racing and Gaming, Mines

(a) See section 'Administration' later in chapter for fuller statement of responsibility.

Relations of Two Houses

Status of Legislative Council

A vexed question for many years was the exact status of the Legislative Council in relation to the House of Assembly from which the Ministry of the day was predominantly chosen. The 1854 Constitution Act had defined Parliament as 'the Governor and the Legislative Council and House of Assembly together' and obviously the approval of all three was necessary for laws to become valid; on the other hand, there was no adequate provision for resolving situations in which the Legislative Council rejected bills or amended bills in ways unacceptable to the House of Assembly. The lower house was elected on a wider franchise, and could legitimately claim to be the more accurate instrument of public opinion to the extent that it was not a perpetual body like the Legislative Council, as its members were all elected at the one time. (Only in 1968 was legislation passed to introduce adult franchise for Legislative Council elections.) The power of the Legislative Council to reject and amend was most resented in relation to money bills, since these vitally affected the administration of public affairs by the Ministry of the day.

The Conflict of 1924 and 1925

The 1924-25 Appropriation Bill was amended by the Legislative Council, involving a reduction of \$37,000. The Premier (J. A. Lyons) decided to challenge the right of the upper house to amend money bills; after a two-house conference had failed to reach agreement, the House of Assembly voted 17 to 10, directing the Speaker to seek Royal Assent for the bill 'in the form it passed the House of Assembly'.

The Administrator (Sir Herbert Nicholls) had already been warned of the constitutional crisis and had cabled the Secretary of State in London *before* the bill was presented for his assent. The advice from London was that he should consult the Crown's law officers as to validity; if he then gave consent, 'responsibility will rest exclusively with your Ministers and no question can arise as to the constitutionality of your action'. The Administrator gave assent to the bill and it went on the statute book with the usual preamble: 'with the advice and consent of the Legislative Council'. A truer description would have been 'against the advice and without the consent of the Legislative Council'.

By 1925, a new Governor (Sir James O'Grady) had taken up office but he followed the precedent set by the Administrator, giving assent to 'one-house' bills (i.e. those in which Legislative Council amendments had not been accepted by the lower house). Both houses were concerned with the possible illegality of these developments and set up a Joint Committee to propose constitutional changes; the outcome is described in the next section.

Money Bills

A period of conflict was followed by the passage of the *Constitutional Amendment Act* 1926 defining the relations of the two houses in the passing of money bills. The following current principles are found in the Act: the Legislative Council retains the right to reject any bill, including a money bill; the Council is specifically prevented from amending bills to raise revenue for the ordinary annual services of the Government and bills imposing land and income tax; it can still suggest to the House of Assembly that amendments be made but the adoption or rejection of such amendments is at the discretion of the Assembly; the operation of such bills is restricted to a period of one year. Apart from the above specific exceptions, the Council retains the right to amend money bills, e.g. those dealing with loan funds or probate. The House of Assembly is given the sole right to initiate bills for the raising of revenue and the imposition of taxes. Finally, the powers of the two houses are declared equal in all matters except for these specific exceptions.

Deadlocks and Dissolutions

It should be observed that there is no provision for a double dissolution as in the Commonwealth Constitution and that the Legislative Council, by rejection of a supply bill, can force the House of Assembly to seek a dissolution without itself needing to face the electorate. This last occurred in 1948.

The Legislative Council has the tradition of being a non-party house and, in actual fact, the majority of its members are elected as independents without the official endorsement of any party, members who have received party endorsement (from the Labor Party) are heavily outnumbered. The leader for the Government in the Legislative Council cannot rely upon a vote taken on party lines to ensure the passage of any government bill. It is the ability to command a majority in the House of Assembly which gives a party the right to form the government of the day and which ensures the passage of government legislation through the lower house; no such certainty exists in the passage of bills through the upper house and accordingly the Legislative Council is in a position to exercise considerable influence on the form in which bills are finally passed through both houses.

As from July 1964, the Liberal Party reversed its policy of non-endorsement of candidates for the Legislative Council and decided to endorse candidates in certain circumstances. It gave endorsement to only one candidate in the period 1964-1970, but an independent won the seat.

Premiers

The following is a list of the Premiers of Tasmania from 1856 (the year in which the first elected Parliament sat):

Premiers from 1856

Name of Premier	Date of Assumption of Office	Date of Retirement from Office	Duration of Office (Months)
1856-1900			
W. T. N. Champ	1.11.56	26. 2.57	4
T. G. Gregson	26. 2.57	25. 4.57	2
W. P. Weston	25. 4.57	12. 5.57	1
F. Smith	12. 5.57	1.11.60	42
W. P. Weston	1.11.60	2. 8.61	9
T. D. Chapman	2. 8.61	20. 1.63	18
J. Whyte	20. 1.63	24.11.66	46
Sir Richard Dry	24.11.66	4. 8.69	32
J. M. Wilson	4. 8.69	4.11.72	39
F. M. Innes	4.11.72	4. 8.73	9
A. Kennerley	4. 8.73	20. 7.76	36
T. Reibey	20. 7.76	9. 8.77	13
P. O. Fysh	9. 8.77	5. 3.78	7
W. R. Giblin	5. 3.78	20.12.78	9
W. L. Crowther	20.12.78	30.10.79	10
W. R. Giblin	30.10.79	15. 8.84	58
Adye Douglas	15. 8.84	8. 3.86	19
J. W. Agnew	8. 3.86	29. 3.87	13
P. O. Fysh	29. 3.87	17. 8.92	65
H. Dobson	17. 8.92	14. 4.94	20
Sir Edward Braddon	14. 4.94	12.10.99	66
1900-			
Sir N. E. Lewis	12.10.99	9. 4.03	42
W. B. Propsting	9. 4.03	11. 7.04	15
J. W. Evans	11. 7.04	19. 6.09	59
Sir N. E. Lewis	19. 6.09	20.10.09	4
J. Earle (a)	20.10.09	27.10.09	..
Sir N. E. Lewis	27.10.09	14. 6.12	32
A. E. Solomon	14. 6.12	6. 4.14	22
J. Earle (a)	6. 4.14	15. 4.16	24
Sir Walter Lee	15. 4.16	12. 8.22	76
J. B. Hayes	12. 8.22	14. 8.23	12
Sir Walter Lee	14. 8.23	25.10.23	2
J. A. Lyons (a)	25.10.23	15. 6.28	56
J. C. McPhee	15. 6.28	15. 3.34	69
Sir Walter Lee	15. 3.34	22. 6.34	3
A. G. Ogilvie (a)	22. 6.34	10. 6.39	60
E. Dwyer Gray	11. 6.39	18.12.39	6
R. Cosgrove	18.12.39	18.12.47	96
E. Brooker	18.12.47	25. 2.48	2
R. Cosgrove	25. 2.48	26. 8.58	126
E. E. Reece	26. 8.58	26. 5.69	129
W. A. Bethune	26. 5.69		

(a) Tasmania had an unbroken succession of Labor Premiers, starting with the Ogilvie Ministry (1934), until the resignation of the Reece government, (following electoral defeat) on 26 May 1969; earlier Labor Ministries were led by J. Earle (first in 1909) and by J. A. Lyons.

Consultation Machinery

When a position is reached in which one house refuses to accept the amendments or legislation of the other, provision exists under the Standing Orders for joint consultation by the calling of a 'Free Conference' at which each house is represented by 'managers'. (It is usual for each house to be represented by four managers.) The free conference endeavours to find a compromise acceptable to both houses.

Another form of consultation between the two houses is the appointment of a joint select committee which is set terms of reference and which is primarily concerned with fact-finding. The passage of a bill may be temporarily delayed while a joint select committee makes a specific investigation; this machinery provides members with the information necessary to cast an informed vote.

Parties

In the period 1909-1970, the major parties have been the Labor Party and the Nationalist Party (which in 1948 was replaced by the Liberal Party). In the early 1920s, a Country Party appeared with five members in the House of Assembly but it soon went out of existence. At the 1964 Assembly elections, a number of Country Party candidates stood but none was successful. In October 1966 K. O. Lyons, one of the House of Assembly members for Braddon, resigned from the Liberal Party and formed the Australian Centre Party, an organisation affiliated with the Australian Country Party.

The record term of office of 35 years for the Labor Party ended with the electoral defeat of the Reece government on 10 May 1969. A Liberal-Australian Centre Party coalition led by the Hon. W. A. Bethune was sworn in on 26 May 1969.

Dissolution of Parliament

The Governor may dissolve the House of Assembly whenever he considers it desirable but he has no power to dissolve the Legislative Council. In effect then, the Legislative Council is a perpetual body except that approximately one-sixth of its seats falls vacant annually.

In practice, the Governor considers dissolving the House of Assembly only when requested to do so by his Ministers. Two recent dissolutions are recorded below:

- 1950: The Governor, Admiral Sir Hugh Binney, received a request for dissolution from the Premier, the main grounds being the difficulty of passing legislation in a House where the Government was dependent on the support of an independent member for its majority. Having first interviewed the Leader of the Opposition and ascertained that no alternative Government could be formed, the Governor granted the dissolution.
- 1956: The Governor, Sir Ronald Cross, received a request for dissolution from the Premier, the grounds being that a Minister of the Crown had resigned and joined the opposition, thus depriving the Government of its majority on the floor of the House. In this case, the Governor could have requested the Leader of the Opposition to form a Government since the opposition now had the majority. However, the Government had not been defeated on the floor of the House, since Parliament had adjourned after the Minister announced his change of allegiance. In granting a dissolution, the Governor thought it 'proper in all the circumstances that the electorate should have an opportunity of expressing its will' and maintained that this decision was a legitimate exercise of his discretionary powers.

Sessions of Parliament

Parliament is required to sit every year and, having risen, must sit again before twelve months have elapsed. When the House of Assembly is dissolved and a general election held, the Governor is required to call Parliament together within ninety days of the dissolution, subject to a discretionary extension of a further thirty days.

Elections for the House of Assembly

Elections for the House of Assembly are conducted under a system which can be classified as proportional representation by the single transferable vote and which is popularly, but incorrectly, called 'Hare-Clark'.

Hare's Proposals

The principle of proportional representation by the single transferable vote was first suggested by Thomas Wright Hill in 1821 and later elaborated by Thomas Hare in his treatise of 1859, *The Election of Representations, Parliamentary and Municipal*. Hare was primarily concerned with elections to the House of Commons and the essence of his proposal was that each voter was to be allowed to support any candidates, anywhere in Britain, and that his votes could be transferred to other candidates in the order of his preference. A candidate was to be declared elected on attaining the quota found by dividing the total votes in the country by the number of seats in the House of Commons; the votes cast for a candidate in his own locality were to be counted for him first and those from more distant places only if required to make up a quota.

The Droop Quota

The concept of the quota was developed in a more sophisticated manner by H. R. Droop as follows:

The Droop Quota

Number of Members to be Elected from Constituency	Minimum Votes Necessary to Ensure Election of Any Member (i.e. Quota)
1	$\frac{1}{2}$ of total votes + 1 vote
2	$\frac{2}{3}$ of total votes + 1 vote
3	$\frac{3}{4}$ of total votes + 1 vote
n	$\frac{1}{n}$ of total votes + 1 vote
	$n + 1$

Contribution of Clark

In 1896, the Tasmanian Attorney-General, A. I. Clark, secured the use of proportional representation for electing the Hobart and Launceston town councils and for choosing Hobart and Launceston representatives for the House of Assembly. (The country seats were still single-member constituencies.) To Clark also is attributed the credit for working out the modern method for dealing with surpluses and transfers.

Tasmanian System

The essential features of the system are as follows:

1. For an elector to cast a valid vote, he must express at least three preferences.

2. Names on the voting papers are arranged in distinct groups to facilitate recognition of allegiance to parties (but names of parties are not specified).
3. To secure election, candidates must secure a quota in accordance with the Droop formula (i.e. the total first-preference votes in the constituency divided by eight, plus one vote).
4. Should a candidate secure an exact quota on first preferences, his voting papers are set aside as finally dealt with.
5. If the first successful candidate secures a surplus above the quota, then all his voting papers are re-examined to determine which candidate should secure the second preferences.
6. The second preferences are first adjusted by multiplying them by a fraction called the transfer value. The transfer value is calculated by dividing the successful candidate's surplus first-preference votes by his total first preferences. The second-preference votes, adjusted in this way, are now transferred to other candidates.
7. When repetition of the above process results in a position where no further candidates can reach a quota, the candidate who is lowest on the poll is excluded and the preferences shown on his voting papers transferred to the remaining candidates.

The above processes are repeated until seven candidates have been elected. As might be expected, the counting of votes, calculation of transfer values and the transferring of votes are time-consuming and a week may elapse before the declaration of a poll.

Tasmanian Adoption

In 1907, an Electoral Act provided that all members of the House of Assembly were to be elected by proportional representation, the State being divided into five constituencies each of which was to be represented by six members. The first election in accordance with this Act was held in 1909.

The fourth schedule to the 1907 Act dealing with quotas, transfer of votes, exclusion of candidates, etc. is still the blue-print for counting votes today; however, as from the 1959 elections, the number of members for each constituency was increased from six to seven, a measure designed to avoid Parliamentary deadlocks.

Advantages of System

The major advantage claimed for the system is that the composition of the House of Assembly tends to faithfully reflect the wishes of the electors viewed on a State basis, and that a party with a minority of first preferences is most unlikely to obtain a majority of seats, as sometimes occurs in systems with single-member constituencies. By way of example, South Australia, using single-member electorates has sometimes been governed by parties receiving a minority of votes but a majority of seats; other Australian States have had similar experience.

Leaving aside the matter of independents and minority parties, and assuming that only candidates from the two major parties are elected, then the present pattern is for each constituency to elect four candidates from one of the major parties and three from the other. It follows, therefore, that the opposition is always adequately represented in the House of Assembly and supporters of the opposition party always have representatives for their constituency.

Resolution of Assembly Deadlocks

House of 30 Members

One of the virtues claimed for the Hare-Clark system is the adequate representation given to minorities. In a small House of 30 members, this virtue tended to be too evident and led to situations where the government of the day did not have the necessary majority to carry all its legislation with confidence.

The first remedy employed was the *Constitution Amendment Act 1954* which provided that, in the event of a 15-all draw between the two major parties in an election, an Electoral Commission would be established. This body's function would be to decide, on the basis of primary votes cast for each party, which were the majority and minority parties. On the meeting of Parliament, the minority party would then have the right to nominate one of its members to the office of Speaker. If the minority party refused to exercise this right, then the majority party might proceed to appoint one of its own members and it would receive an additional member in replacement, elected from the Speaker's constituency.

The election of 1955 created an equal distribution of seats and an Electoral Commission was accordingly appointed to decide the question of which was the majority party. The minority party nominated a member for Speaker and the Assembly elected him to the Chair.

The 1954 Act provided machinery for overcoming deadlocks but still did not have much impact on the major problem—that of providing the government of the day with an effective working majority.

House of 35 Members

In 1958, a further constitutional amendment was made in which the number of members to be elected for each constituency was increased from six to seven, thus enlarging the House of Assembly from 30 to 35 members. At the first elections held under the provisions of this amendment (May 1959), the major parties secured 17 and 16 seats respectively, the remaining seats being won by independents. At the May elections of 1969, the major parties secured 17 seats each, the other going to the Australian Centre Party.

Life of House of Assembly

After the *Constitution Act 1936*, the House was elected for five-year terms. The 1954 Act provided that the term should be reduced to three years if the special deadlock provisions were invoked to appoint a Speaker, but the 1958 Act restored five-year terms irrespective of the outcome of the election. In 1969, the life of the House was reduced to three years by the newly-elected Bethune government, with the exception of the present Parliament which retains the five-year term.

Constituencies of House of Assembly

The five constituencies for the House of Assembly are identical with the five electoral divisions electing members to the Federal House of Representatives. The periodic alteration of electoral boundaries to accord with changes in population is carried out under a joint Commonwealth-State agreement, the most recent redistribution being in July 1968.

Alteration of Electoral Boundaries

The following table summarises the effect of the 1968 Electoral Commissioners' redistribution for Tasmania (the number of electorates remained unaltered.)

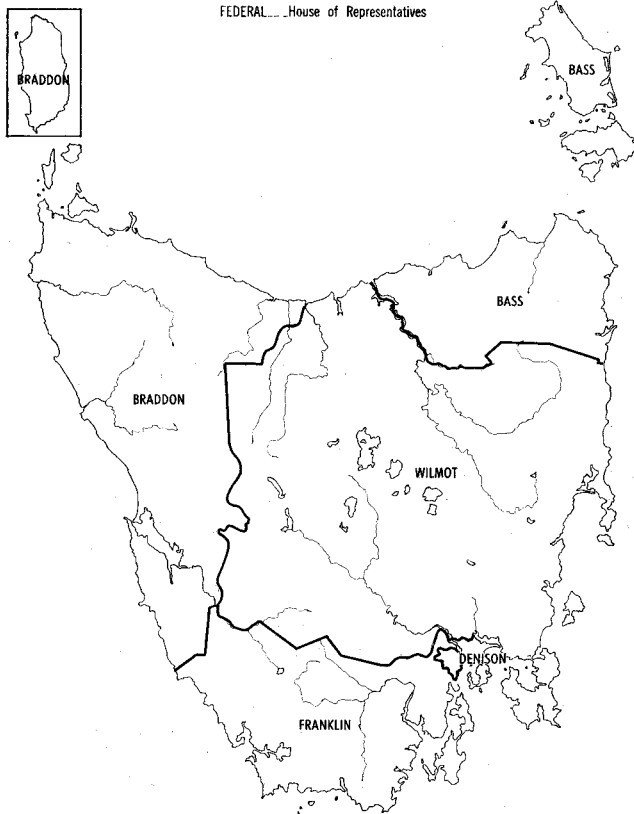
Boundary Changes, Tasmanian Federal Electorates, July 1968

Electorate	Enrolments at 31 May 1968		Nature of Change
	In Previous Boundaries	In New Boundaries	
Bass	40,139	40,139	No change
Braddon	41,803	41,803	No change
Denison	35,353	42,917	Increased from parts of Franklin
Franklin (a)	49,026	37,203	Parts transferred to Denison and Wilmot
Wilmot	37,103	41,362	Increased from parts of Franklin
Total	203,424	203,424	..

(a) Electorate with fastest growing population; apparent inequality will disappear.

ELECTORAL DIVISIONS**(Changed 1968)**

STATE.....House of Assembly
FEDERAL.....House of Representatives



Proportional Representation by the Single Transferable Vote

Many regard the system of election for the House of Assembly as being a phenomenon peculiar to Tasmania. This is by no means so, since the following countries either use or have used a similar system of election: Republic of Ireland (both Houses), South Africa (Senate), Malta (both Houses), Gibraltar (Legislative Council), Canada (for some provincial electorates in Alberta and Manitoba) and Australia itself, in the election of the Federal Senate. If the State has any claim to being unique in the field of electoral reform, it must be based on the fact that Tasmania was the first country in the world to introduce proportional representation by the single transferable vote.

Elections for the Legislative Council

Annual Fractional Elections

For the purpose of electing members of the Legislative Council, the State is divided into nineteen single-member constituencies. Each member, when elected, holds office for six years and Council elections are held every year to elect three members; however, in every sixth year counting from 1965, it is necessary to elect four members.

Should any seat become vacant otherwise than by effluxion of time, the person elected to fill the vacancy holds office only till the expiration of the period for which the vacating member was elected.

Preferential Voting

Candidates appear on the voting paper in alphabetical order and are not grouped to show party allegiance as in voting papers for the House of Assembly. If there are two candidates, the voter need only vote for one. If there are three or more candidates, the voter must indicate at least three preferences to record a valid vote.

If any candidate secures first-preference votes exceeding half the total first preferences, he is declared elected. If no candidate satisfies this condition, then the candidate with the fewest votes is excluded and the second preferences shown on his voting papers are transferred to other candidates, the transfer value of each such second preference being equal to one.

If no candidate now has the required majority, the process of exclusion is repeated until such time as one candidate secures the majority.

The method of counting is identical with that used in elections for the Federal House of Representatives and is termed preferential. The full description is election by absolute majority through use of the alternative vote.

New Boundaries, Legislative Council Divisions

Late in 1967, the *Constitution Act* 1934 was amended to change the boundaries of the Legislative Council Divisions, the *new* boundaries being used for the first time in 1969.

The redistribution differentiated between the faster growing populations in urban electorates and the stationary or contracting populations in rural seats. Special provision was made for the isolated west coast seat of Gordon.

The following table shows the number of electors in each division before and after redistribution and at 30 June 1969. Although universal franchise replaced the former restricted franchise on 1 July 1969, few newly eligible

electors have enrolled and as a result the Electoral Department is progressively updating the roll concentrating on the three electorates to be contested each year.

Legislative Council: Effect of Changed Boundaries on Number of Electors in Each Division

Division (a)				Before Redistribution	After Redistribution (b)	
				31 May 1968	30 Sept 1968	30 June 1969
Buckingham (H)	..	..	..	11,450	10,227	9,889
Cornwall (L)	..	..	..	6,556	9,499	9,219
Derwent (R)	..	..	..	13,370	6,078	6,029
Gordon (S)	..	..	..	4,039	3,731	3,941
Hobart (H)	..	..	..	4,565	10,091	9,919
Huon (R)	..	..	..	9,141	7,776	7,661
Launceston (L)	..	..	..	2,826	8,998	9,401
Macquarie (R)	..	..	..	7,107	5,819	5,775
Meander (R)	..	..	..	5,639	7,151	7,091
Mersey (DU)	..	..	..	11,023	11,037	11,106
Monmouth (R)	..	..	..	3,491	6,313	6,852
Newdegate (H)	..	..	..	7,867	11,822	11,798
Pembroke (H)	..	..	..	17,214	13,347	13,457
Queenborough (H)	..	..	..	7,824	9,495	9,515
Russell (R)	..	..	..	8,189	8,268	8,655
South Esk (R)	..	..	..	9,517	7,263	7,298
Tamar (R)	..	..	..	8,183	6,182	6,154
West Devon (BP)	..	..	..	9,249	9,438	9,493
Westmorland (L)	..	..	..	13,270	8,290	8,174
Total	..	..	..	160,520	160,825	161,427

(a) (H)=Hobart and suburban; (L)=Launceston and suburban; (BP)=Burnie and Penguin municipalities; (DU)=Parts of Devonport and Ulverstone municipalities; (R)=rural; (S)=special.

(b) Franchise widened 1 July 1969; figures not directly comparable.

Qualifications of Electors and Members

Qualifications of an Elector

An elector for both the House of Assembly and the Legislative Council is any person, aged at least twenty-one years, male or female, who has lived in the State six months continuously, who is a natural-born or naturalised subject of the Queen and whose name is on the electoral roll for any Assembly division. Voting has been compulsory since the *Electoral Act* 1928. The special qualifications for electors of the Legislative Council were abolished on 1 July 1969 following amendments to the *Constitution Act* 1934 and the *Electoral Act* 1907.

In contrast with elections for Federal Parliament, there is no provision in the Tasmanian Electoral Act for voting by members of the overseas armed forces under the age of twenty-one years.

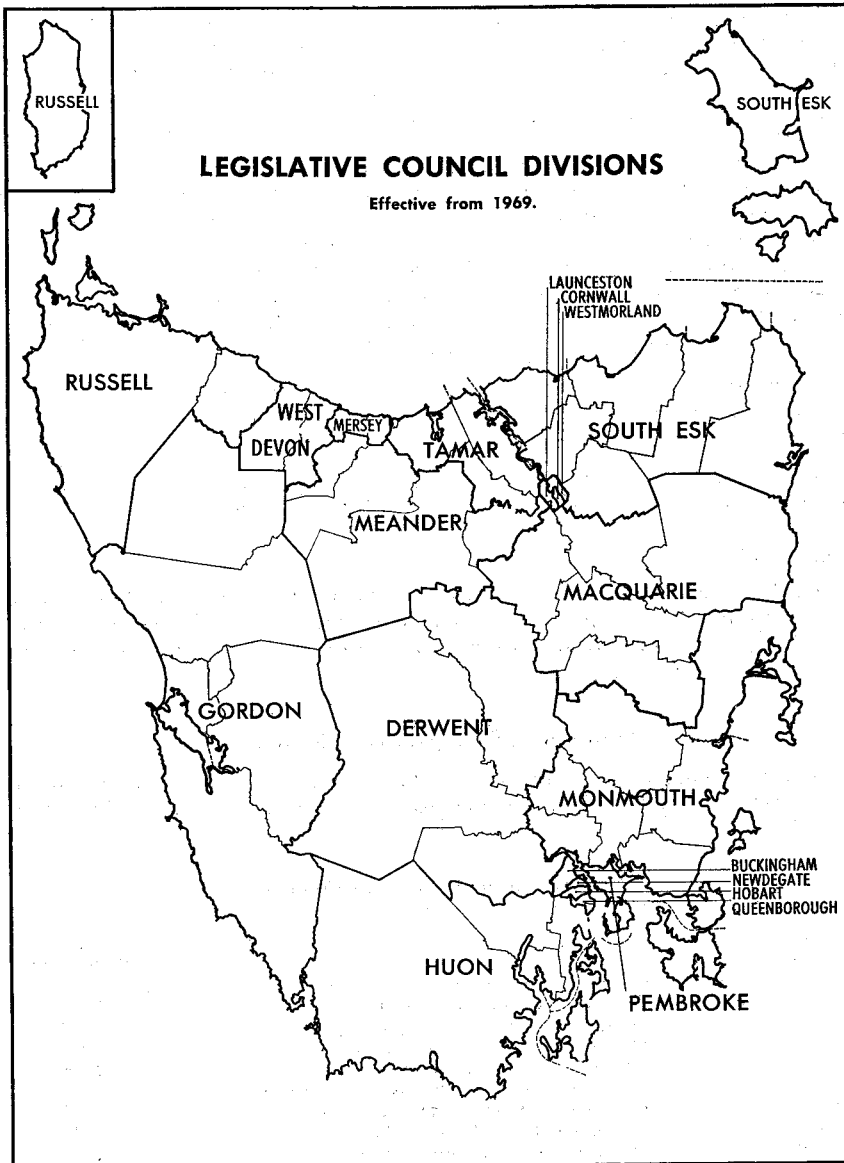
Qualifications of Members

House of Assembly: To be eligible for election as a member of the House of Assembly, a candidate must comply with the following conditions:

He must either be an elector or be qualified to be an elector for the House of Assembly, and resident in Tasmania for five years at any one time or resident for two years immediately preceding the election.

Legislative Council: A candidate for the Legislative Council must be an elector or have the qualifications of an elector for the Council; in addition to meeting the residential and nationality restrictions imposed on candidates for the House of Assembly, he must be at least twenty-one years of age.

Persons of unsound mind or in prison under any conviction are barred from voting at elections for either House or from being elected to either House. No person shall be capable of being a member of both Houses at the one time.



By-Elections*House of Assembly*

In the case of a vacancy occurring in the House of Assembly, there is provision for the Chief Electoral Officer to publicly invite nominations from candidates who were unsuccessful at the last general election in the constituency which elected the vacating member. If one nomination only is received, then the Chief Electoral Officer declares the consenting candidate elected and notifies the Governor to this effect.

If more than one such nomination is received, the Chief Electoral Officer is required to examine the voting papers counted for the vacating member at the last general election. In the simple case—where the vacating member obtained a surplus above the quota—this can be confined to voting papers expressing first choices. In the more difficult case—where the vacating member did not obtain a quota on first choices—it is necessary to take into account not only original first-choice papers but also all voting papers representing votes transferred to the vacating member.

The vacating member's voting papers, as defined above, are examined and all his votes are transferred to the consenting candidates according to the preferences expressed thereon. Second preferences derived from first choice votes of the vacating member have a transfer value of one, but from votes he obtained by transfer, only the value at which he obtained them. For the purpose of the count, first-choice votes received by the consenting candidates at the general election are not relevant—the selection is based on preferences as revealed by the voting papers of the vacating member.

When the number of votes in favour of each consenting candidate has been ascertained, the final selection is by the method of the absolute majority through the alternative vote.

If no nominations are received from candidates unsuccessful at the last general election, then an election is held to fill the vacancy.

Legislative Council

In the case of a vacancy occurring in the Legislative Council, a writ is issued directing that an election be held to fill the vacancy. There is no provision for a re-count of voting papers of the vacating member as in by-elections for the House of Assembly.

Members of Legislative Council

The following shows members of the Legislative Council, the electoral division which they represent and the year in which each will retire from the Council.

Members of the Legislative Council

Electoral Division	Member's Name	Year for Retirement
Buckingham	Lowrie, The Hon. Kenneth Francis	1974
Cornwall	Foot, The Hon. Geoffrey James (a)	1972
Derwent	Dixon, The Hon. Joseph Henry	1973
Gordon	Broadby, The Hon. Albert James	1976
Hobart	Benjamin, The Hon. Phyllis Jean, MBE(b)	1976
Huon	Hodgman, The Hon. William Michael	1972
Launceston	Shipp, The Hon. Raymond William	1976
Macquarie	Shaw, The Hon. George Arthur	1974
Meander	Best, The Hon. Charles Robinson	1971

Members of the Legislative Council—*continued*

Electoral Division	Member's Name	Year for Retirement
Mersey	McFie, The Hon. Hector (<i>c</i>)	1972
Monmouth	Bisdee, The Hon. Louis Fenn	1975
Newdegate	Miller, The Hon. Brian Kirkwall (<i>b</i>)	1975
Pembroke	McKay, The Hon. Eric Charles	1971
Queenborough	Shoobridge, The Hon. Louis Manton (<i>d</i>)	1971
Russell	Fenton, The Hon. Charles Balfour Marcus	1975
South Esk	Carins, The Hon. Lloyd Horton	1974
Tamar	Hitchcock, The Hon. Daniel	1973
West Devon	Davis, The Hon. Walter John Torley (<i>e</i>)	1971
Westmorland	Gregory, The Hon. Oliver Harold	1973

(*a*) Leader for the Government in the Legislative Council.

(*b*) Endorsed by Australian Labor Party; balance of members are independents.

(*c*) Chairman of Committees.

(*d*) Elected at a by-election (28 September 1968).

(*e*) President.

Members of House of Assembly

The following shows members of the House of Assembly elected on 10 May 1969 and their party allegiance:

Members of the House of Assembly

Electoral Division	Member's Name	Party Affiliation
Bass	Atkins, Alexander Charles Barnard, Michael Thomas Claude Barrenger, Timothy Alan Beattie, The Hon. Eric William Bushby, Maxwell Holmes (<i>a</i>) Foster, Allan John Henty, James Wilson	A.L.P. A.L.P. Liberal Liberal Liberal A.L.P. Liberal
Braddon	Barker, The Hon. Wilfrid George Breheny, John Gerald Chisholm, Geoffrey Donald Costello, Lloyd Edwin Albert Lyons, The Hon. Kevin Orchard (<i>b</i>) Reece, The Hon. Eric Elliott (<i>c</i>) Ward, Sydney Victor	Liberal Liberal A.L.P. A.L.P. Centre A.L.P. A.L.P.
Denison	Abbott, The Hon. Nigel Drury Austin, Kenneth Ernest Baker, Robert Wilfrid Batt, Neil Leonard Charles Bingham, The Hon. Eardley Max Everett, Mervyn George, QC Mather, The Hon. Robert	Liberal A.L.P. Liberal A.L.P. Liberal A.L.P. Liberal
Franklin	Barnard, Eric Walter Clark, The Hon. Douglas Frank Frost, Stewart Charles Hilton Gough, Stanley William Lowe, Douglas Ackley Neilson, William Arthur Pearsall, Geoffrey Alan	A.L.P. Liberal A.L.P. Liberal A.L.P. A.L.P. Liberal

(*a*) Chairman of Committees.

(*b*) Deputy Premier in the Liberal-Centre Party coalition government.

(*c*) Leader of the Opposition.

Members of House of Assembly—continued

Electoral Division	Member's Name	Party Affiliation
Wilmot	Anderson, William Bessell, The Hon. Leonard Hubert Bethune, The Hon. Walter Angus (d) Braid, Ian Maxwell Cashion, Douglas Alfred Fagan, Roy Frederick Ingamells, Christopher Robert (e)	A.L.P. Liberal Liberal Liberal A.L.P. A.L.P. Liberal

(d) Premier of Tasmania.

(e) Speaker.

Parliamentary Elections

House of Assembly

The last general election for the House of Assembly was held on 10 May 1969. The following table shows the voting in general elections held for the House of Assembly since 1931:

Assembly Elections Since 1931

Year of Election	Electors on Roll	Votes Recorded		Informal Votes	
		Number	As Percentage of Enrolled Electors	Number	Percentage of Total Votes
1931	118,730	112,779	95.0	3,885	3.44
1934	127,681	120,622	94.5	3,855	3.20
1937	132,001	124,460	94.3	2,997	2.41
1941	139,234	127,034	91.2	6,344	4.99
1946	157,756	143,674	91.1	14,484	10.08
1948	161,088	148,588	92.2	5,866	3.95
1950	161,650	152,785	94.5	6,841	4.48
1955	173,165	162,637	93.9	6,158	3.79
1956	174,632	166,293	95.2	6,968	4.19
1959	180,344	170,559	94.6	9,816	5.76
1964	193,364	184,571	95.5	7,980	4.32
1969	210,268	198,571	94.4	9,248	4.66

The next table shows the number of electors on the divisional electoral rolls at the three most recent elections.

Number of Electors on Roll at Recent Elections

Division	Election		
	Senate 25 November 1967	House of Assembly 10 May 1969	House of Representatives 25 October 1969
Bass	no. 37,840	no. 41,104	no. (a) 40,926
Braddon	39,485	43,383	43,897
Denison	33,473	44,595	(a) 44,386
Franklin	46,772	38,929	39,479
Wilmot	35,737	42,257	42,413
Total	193,307	210,268	211,101

(a) Electoral roll for division reviewed in July 1969.

The percentage of informal votes in the previous table is not particularly high, even though the voting papers for six or seven-member electorates are necessarily more complicated than those for single-member electorates. In Senate elections held in Tasmania, informal votes tend to be rather a large proportion of votes cast and, in the 1934 election, exceeded 16 per cent. In Assembly elections, only three preferences are compulsory whereas in Senate elections, the voter must indicate as many preferences as there are candidates.

Legislative Council

There are no general elections for the Legislative Council; three members retire each year except in every sixth year (e.g. 1977, 1983) when four members retire. At 31 December 1969, 175,282 electors were enrolled. In the last six years, votes cast at the annual elections have varied from 78.0 to 91.8 per cent of enrolled electors in individual electorates.

Effectiveness of Hare-Clark System

Tasmania as a Single Electorate

Since voting for the House of Assembly requires a voter to make at least three choices in order of preference, any complete investigation of the effectiveness of the system requires a study of all preference votes. However, an approximate measure of effectiveness can be obtained by treating the State as a single electorate and finding the total first-preference votes obtained by each party; from these totals it is possible to calculate, by simple proportion, the theoretical share of seats to which each party is entitled. In the table that follows, this measure of effectiveness has been calculated for all House of Assembly elections in the period 1931-1969 inclusive. It will be seen that although the relationship between seats actually won and the calculated proportionate share is fairly close in most elections for the major parties, a change in the number of members elected for each electorate after the 1959 election has partially unbalanced this relationship. At the 1969 elections, the contending parties were Australian Centre Party, Democratic Labor Party, Labor Party and Liberal Party, while a number of candidates stood as independents.

Representation of Parties for the Whole State, 1931-1969
House of Assembly

Election Year	Labor		Liberal (from 1948) or Nationalist		Other (b)	
	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won
1931	10.47	10	16.92	19	2.61	1
1934	13.74	14	14.01	13	2.25	3
1937	17.61	18	11.64	12	0.75	..
1941	18.78	20	10.98	10	0.24	..
1946	15.29	16	10.27	12	4.44	2
1948	14.82	15	11.35	12	3.83	3
1950	14.59	15	14.27	14	1.14	1
1955	15.79	15	13.60	15	0.61	..
1956	15.08	15	13.08	15	1.84	..
1959 (c) ..	15.58	17	14.37	16	5.05	2
1964 (c) ..	17.97	19	13.47	16	3.56	..
1969 (c) ..	r 17.17	17	r 15.83	17	r 3.00	1

(a) State treated as single electorate and proportionate share of seats calculated on basis of first preference votes cast for parties.

(b) Independents and minority parties.

(c) 35 members elected.

Criticism of System

Following the 10 May 1969 election considerable criticism was made of the Hare-Clark preferential voting system. Critics claim that single-member electorates would have more closely reflected the feelings of the electorate and would have ensured more equitable representation for all areas, rather than a concentration of members in a particular part of an electorate as is possible due to the large size of Tasmanian electorates. Of the 35 members in the House of Assembly, 16 reside in the Hobart metropolitan area, 13 in other urban centres and only six in the rural areas of the state.

Salaries of Members of Parliament*Committees of Enquiry*

In determining the level of parliamentary salaries in State and Commonwealth legislatures, it has been fairly general practice in the last decade to establish committees of enquiry, the members of which are drawn from outside parliament. The committees of enquiry are required to make recommendations but their findings are treated by the parliaments as being merely a guide, and the legislation fixing new salaries and allowances has not necessarily followed the committees' recommendations in detail.

Parliamentary Salaries Tribunal

In 1962, the Tasmanian Parliament established a new principle by passing an Act for the setting up of a parliamentary salaries tribunal; this was to be a committee with members drawn from outside the Parliament but its findings, instead of being recommendations, were to be determinations binding on the Crown. Under Section 7 of the 1962 Act, 'a determination is binding upon the Crown' and 'where no date is specified in a determination as the date on which the determination is to come into force, the determination comes into force on the date on which it is made'. In effect, the Tasmanian Parliament has adopted the principle of wage and salary fixation by independent tribunal and placed its members in the same position as the great majority of workers whose remuneration is fixed by determinations of industrial courts.

The Parliamentary Salaries Tribunal heard evidence after the elections on 2 May 1964, and made a determination to come into effect as from 1 October 1964. It made its second determination in 1967. A further review of salaries and allowances was undertaken during 1970.

Prior to the 1970 determination a member of parliament received a basic salary of \$6,000 and an additional amount if he held a position of responsibility in the House or Party. In addition to salary, he also received an electorate allowance which varied depending on the size of the electorate and its location.

1970 Determination

The Parliamentary Salaries Tribunal, consisting of a retired N.S.W. judge, the Chairman of the Tasmanian Public Service Tribunal and the Professor of Political Science at the University of Tasmania, which reviewed parliamentary salaries heard evidence during July and August 1970 and their decision was handed down on 8 September 1970.

The determination increased the Premier's salary to \$16,000, the Deputy-Premier to \$13,400, Ministers of the Crown to \$12,200 and the back benchers in both Houses to \$7,200.

In addition to varying electorate allowances the accommodation allowance for back benchers who have to stay away from home when the Houses are sitting has been fixed at \$12 per day. Intrastate daily travelling allowances are \$12 for Ministers and \$14 for the Premier.

Determinations of the Parliamentary Salaries Tribunal, 1964, 1967 and 1970
(\\$)

Particulars	Rate Per Annum from 1.10.1964	Rate Per Annum from 1.10.1967	Rate Per Annum from 1.10.1970
BASIC SALARY OF MEMBERS			
Member, Legislative Council ..	4,600	6,000	7,200
Member, House of Assembly ..	4,600	6,000	7,200
SPECIAL RATES (GROSS) (a)			
Cabinet—			
Premier (b)	10,000	13,300	16,000
Deputy-Premier	8,200	11,300	13,400
'Senior' Ministers	7,600	10,200	12,200
'Junior' Ministers	7,600		
Legislative Council—			
President	6,200	8,060	9,600
Chairman of Committees	5,400	7,300	8,600
Government Leader	7,000	9,100	10,300
Deputy Leader	5,250	6,800	8,000
House of Assembly—			
Speaker	6,200	8,060	9,600
Leader of Opposition	(c) 7,400	(c) 9,950	11,700
Deputy Leader	5,400	7,020	8,400
Chairman of Committees	5,400	7,300	8,600

(a) All rates include the basic salary received by the office-holder as a member.

(b) Excludes entertainment allowance of \$700 (1964) and \$900 (1967 and 1970).

(c) Excludes travelling allowance of \$500 (1964); and \$650 (1967).

Electorate Allowances: Parliamentary Salaries Tribunal, 1964, 1967 and 1970
(\\$)

Electorate	Rate Per Annum from 1.10.1964	Rate Per Annum from 1.10.1967 (a)	Rate Per Annum from 1.10.1970 (a)
Legislative Council—	\$	\$	\$
(i) Buckingham	600	700	750
Hobart		600	650
Newdegate		600	650
Queenborough		600	650
(ii) Cornwall	750	600	700
Launceston		600	700
Westmorland		800	800
(iii) Derwent	900	1,100	1,075
Huon		1,000	1,075
Mersey		900	975
Tamar		1,000	1,075
West Devon		900	975
(iv) Gordon	1,000	1,000	1,475
Macquarie		1,100	1,175
Monmouth		1,000	1,375
Pembroke		1,400	750
(v) Meander	1,100	1,200	1,275
Russell		1,400	1,475
South Esk		1,400	1,475
House of Assembly—			
Denison	1,100	1,100	1,100
Franklin	1,450	1,650	1,500
Bass	1,500	1,700	1,850
Braddon	1,700	1,900	2,100
Wilnot	1,850	2,100	2,500

(a) Ministers and Leader of Opposition receive only 75 per cent.

The 1964 determination removed the salary distinction between 'senior' Ministers and 'junior' Ministers; the tribunal found that the distinction rested solely on historical grounds.

The Tribunal reviewed electorate allowances and arranged Legislative Council electorates into five groups, members from each group receiving the same allowance. The 1970 determination varied the allowances in accordance with the 1968 and 1969 electoral boundary changes. Several electorates had allowances greatly reduced, e.g. Pembroke \$750 (previously \$1,400), but the majority received slight increases.

The Tribunal in 1967 specified \$10 per day 'when Parliament sits payable to a Member (other than a Minister) who incurs expense in securing overnight accommodation away from his ordinary place of residence'. This was increased to \$12 in 1970. In 1967, home telephone rentals were paid for members for the first time. This practice was continued in the 1970 determination.

ACTS OF STATE PARLIAMENT

Summary of Recent Acts

In the list that follows, the notation used is:

- (A 1952)—An Act to amend an Act of the same title passed in 1952.
- (R 1952)—An Act to repeal an Act of the same title passed in 1952.
- (P 1952)—An Act to be incorporated and to be read as one with the Principal Act passed in 1952.
- (RS 1952)—An Act to repeal an Act of the same title passed in 1952 and to substitute new legislation.

State Acts, 1968

Number	Short Title and Summary
1	St John's Hospital Loan Guarantee—guarantee repayment of loan.
2	Ambulance Board of Southern Tasmania (Lands)—disposal of land owned by Southern Tasmanian Ambulance Transport Service Board.
3	Pear Subsidy—canning pear subsidy.
4	Tasmanian University (A 1951)—constitution of council, guarantee loans raised by affiliated colleges.
5	Nurses' Registration (A 1952)—constitution of Nurses' Registration Board, vacation of office and filling of vacancies, qualifications for registration as a nurse.
6	Legal Assistance (A 1962)—schemes for granting legal assistance.
7	Supply 1968-69—Consolidated Revenue.
8	Transport (P 1938)—authorise Transport Commission to carry on certain road transport services until 30 November 1968.
9	Loan Fund Supply 1968-69—appropriation of funds.
10	Advanced Education—facilitate provision of advanced education.
11	Rural Fires (Confirmation)—confirm <i>Rural Fires Act</i> 1967.
12	Cleveland Tin Loan Guarantee—guarantee repayment of loan.
13	Education (A 1932)—functions of Board of Technical Education, various other amendments.
14	Motor Vehicles Tax (A 1917)—exemption of fire-fighting vehicles.
15	Police Association Loan Guarantee—guarantee repayment of loan.
16	Public Account (A 1957)—repeal of section of original Act.

State Acts, 1968—continued

Number	Short Title and Summary
17	Mines Inspection—repeal of <i>Mines and Works Regulation Act</i> 1915, new provisions for inspection and regulation of mines and like works.
18	Ambulance (A 1959)—compensation for injuries, etc. to ambulance officers.
19	Physiotherapists' Registration (A 1951)—provisional registration.
20	Electric Power Development—Commonwealth-State financial assistance agreement for development of hydro-electric power.
21	Hydro-Electric Commission (A 1944)—Temporary borrowing powers, electrical mechanics' licences and permits.
22	Superannuation (A 1938)—transfer funds to Superannuation Board, conversion of certain annuities.
23	Lady Clark Geriatric Centre—transfer of Crown land to Lady Clark Geriatric Centre.
24	Local Government (A 1962, 1967)—dog tax, parking meter offences, right to establish parking meters, closure of metered spaces.
25	Weights and Measures (A 1934)—miscellaneous provisions.
26	War Service Land Settlement (A 1950)—disposition of land by the Board, residence, purchase, leases.
27	Public Service Tribunal (A 1958)—awards by consent.
28	Strahan Marine Board Loan (A 1963)—guarantee repayment of certain loans, borrowing powers.
29	Stamp Duties (A 1931)—duty on cheques, bankers' drafts, letters of credit, etc.
30	Albert Henry Jackson Pension (A 1931)—pension payable to Albert Henry Jackson.
31	Public Service Tribunal (No. 2) (A 1958)—miscellaneous provisions.
32	Sunday Observance—consolidate and amend Sunday observance legislation.
33	Adoption of Children (RS 1920, 1960)—provisions affecting adoption of children.
34	Disposal of Uncollected Goods—right to dispose of uncollected goods.
35	Traffic (A 1925)—licensing of public vehicles, offences in relation to public vehicles, correction of <i>Traffic Act</i> (No. 2) 1964.
36	Long Service Leave (A 1956)—entitlement to long-service leave, payment in lieu of long service leave on death of employee.
37	Primary Producers Relief—grant loans to drought affected farmers.
38	State Employees (Long-Service Leave) (A 1950)—calculation of length of leave, allowances to employees on death or termination of employment.
39	Huon Valley Pulp and Paper Industry (A 1959)—water rights.
40	Parliamentary Retiring Allowances (A 1955)—revise method of calculating parliamentary pensions.
41	Governor's Salary (A 1951)—increase salary of the governor and administrator.
42	Daylight Saving—promote daylight saving.
43	Supplementary Appropriation 1967-68—appropriation of funds from Consolidated Revenue.
44	Appropriation 1968-69—appropriation of funds from Consolidated Revenue.
45	Land Tax—rate of land tax for 1968-69.
46	Legal Practitioners (A 1959)—miscellaneous provisions.
47	Loan Fund Appropriation 1968-69—issue and application of moneys from Loan Fund, borrowing powers, satisfaction of certain expenditure.
48	Maintenance (A 1967)—maintenance of children, interim orders for maintenance.
49	Constitution (Disqualification Removal)—election and vacation of seat by Hon. J. R. Orchard.
50	Tasmanian Sanatorium (A 1950)—alteration of trust, vesting of site in Minister upon trust.
51	Stamp Duties (No. 2) (A 1931)—Stamp duty on insurance policies, sale of real or personal property.
52	Medical (A 1959)—special licences.
53	Wrest Point Casino Licence and Development (Referendum)—authorise referendum.

State Acts, 1968—*continued*

Number	Short Title and Summary
54	Constitution (No. 2) (A 1934)—amend boundaries of House of Assembly electoral divisions.
55	Transport Commission (Road Transport Undertaking Disposal)—authorise Transport Commission's disposal of 'Green Coach Line'.
56	Fisheries (A 1959)—miscellaneous provisions.
57	Appeal Costs Fund—establish a fund to meet appeal costs.
58	Registration of Births and Deaths (A 1895)—miscellaneous provisions.
59	Mowbray Heights War Memorial Hall (Transfer of Moneys)—sale of certain land situated at Mowbray Heights and handling of net proceeds from sale.
60	Marine (A 1921)—number and election of members on Flinders Island Marine Board.
61	Alcohol and Drug Dependency—treatment of alcoholics and drug addicts, repeal of earlier legislation.
62	Racing and Gaming (A 1952)—suspension and cancellation of bookmakers' licences.
63	State Employees (Long-Service Leave) (No. 2) (A 1950)—right of employee to retire, preservation of other rights.
64	Congregational Union (Shipwrights Point Land)—ownership of Congregational cemetery and right to dispose of the land.
65	Primary Producers' Relief (No. 2) (A 1968)—loan terms, Commonwealth provision of funds.
66	Coroners (A 1957)—miscellaneous provisions.
67	Stamp Duties (No. 3) (A 1931)—miscellaneous provisions.
68	Constitution (A 1934)—qualifications of members of Legislative Council and Legislative Council electors.
69	Electoral (A 1907)—persons entitled to enrol on Legislative Council electoral roll.
70	Wheat Industry Stabilisation—marketing of wheat, powers of Australian Wheat Board.
71	Pulpwood Products Industry (Eastern and Central Tasmania)—establishment of woodchip industry in eastern and central Tasmania, granting of concession areas.
72	Audit (A 1918)—stamp duties.
73	Judges' Contributory Pensions—contributory pensions for judges of Supreme Court.
74	Traffic (No. 2) (A 1925, 1966)—production of licence, hearing of charges, cancellation of licences, Public Vehicles Licensing Appeal Tribunal, effect of disqualification on licences issued outside the State, incorporation of standards, alcohol content of drivers' blood.
75	Textile Products (Description) (A 1953)—prohibition of sale of textile products without a prescribed trade description being affixed.
76	Rural Fires (A 1967)—Hobart special fire area, compensation for injury or death of firefighters.
77	Criminal Code—abolish capital punishment.
78	Wrest Point Casino Licence and Development—development of Wrest Point Hotel, issue of casino licence.
79	Deceased Persons' Estates Duties (A 1931)—estate upon which duty payable, amendment of assessment, certificate from Commissioner before dealing with estate of deceased person.
80	Local Government (No. 2) (A 1962)—miscellaneous provisions.
81	Railway Management (Emu Bay Railway Employees)—employees transferring from Emu Bay Railway Co. Ltd to Transport Commission.
82	State Employees (Long-Service Leave) (Emu Bay Railway Employees)—application to employees transferring from E.B.R. to Transport Commission.
83	Education (No. 2) (A 1932)—powers of Schools Board of Tasmania, issue of certificates by the Schools Board.
84	Mining (A 1929)—officers holding interests in mines.
85	Superannuation (No. 2) (A 1938)—miscellaneous provisions.

State Acts, 1968—continued

Number	Short Title and Summary
86	Pesticides—control sale and use of pesticides, amend <i>Stock Medicines, Fertilisers and Pesticides Act</i> 1950.
87	Fluoridation—addition of fluoride to public water supplies.
88	Crown Lands (Miscellaneous Provisions)—miscellaneous provisions relating to Crown and other land.
89	Auctioneers and Estate Agents (A 1959)—licences, rules of practice, limitations on commission, advertising, and other provisions.

State Acts, 1969

Number	Short Title and Summary
1	Supply 1969-70—appropriation from Loan Fund.
2	Supply 1969-70—appropriation out of Consolidated Revenue.
3	Agent-General (A 1911)—salary increase.
4	Audit (A 1918)—salary increase.
5	Public Service (A 1923)—salary increase.
6	Tasmanian Orchestra (Continuation) (A 1951)—miscellaneous provisions.
7	Flinders Marine Board Loan (A 1952)—borrowing powers.
8	Racing and Gaming (A 1952)—commission paid by bookmakers.
9	Judges' Salaries (A 1920)—salary increase.
10	Education (A 1932)—State aid.
11	Primary Producers Relief (A 1968)—drought relief.
12	Kennerley Children's Homes—establishment of children's homes from sale of existing lands.
13	Consolidated Revenue Fund Appropriation 1969-70—Consolidated Revenue.
14	Public Servants' Retiring and Death Allowances (A 1925)—miscellaneous provisions.
15	Elderly Citizens' Clubs and Youth Centres (A 1966)—borrowing of monies, debt charges.
16	Loan Fund Appropriation 1969-70—Loan Fund.
17	Consolidated Revenue Fund Supplementary Appropriation 1968-69—appropriation of \$1,866,769.43.
18	Land Tax 1969—rates of land tax for 1969-70.
19	Bills of sale (A 1900)—miscellaneous provisions.
20	Stipendiary Magistrates 1969—appointment, salary and tenure of office.
21	Deceased Persons' Estates Duties (A 1931)—allowance for duty paid abroad.
22	Tasmanian University (A 1951)—election of Chancellor and Vice-Chancellor.
23	Companies (Death Duties) 1969—duty on the death of the holder of securities of a company.
24	Licensing (A 1932)—payment of fees, forfeiture of licences.
25	Wheat Industry Stabilization (A 1968)—wheat for non-human consumption, modification of production quotas.
26	Legal Assistance (A 1962)—Committee to administer scheme; powers of committee to recover costs.
27	Motor Vehicles Tax (A 1917)—rates of tax.
28	Dairy Produce (A 1932)—labelling of table and cooking margarine, prohibition of manufacture and sale of cooking margarine and butter containing certain substances.
29	Water (A 1957)—right of H.E.C. to sell water.
30	Railway Management (A 1935)—land rights, suspension of employees, disciplinary powers.
31	Co-operative Industrial Societies (A 1928)—compilation of annual returns.
32	Hobart Marine Board Loan (A 1947)—change in borrowing powers.
33	North Esk Regional Water (A 1960)—permission to carry out works in connection with water supply.

Number	Short Title and Summary
34	West Tamar Water (A 1960)—permission to carry out works in connection with water supply.
35	Launceston Corporation (A 1963)—regional waterworks.
36	Wheat Quotas (In accordance with <i>Wheat Industry Stabilization Act</i> 1968)—Tasmanian wheat quotas—wheat Quota Committee and powers.
37	State Sinking Fund (A 1929)—powers and duties of commissioners.
38	Superannuation (A 1938)—cost of living adjustment, increases in new pensions.
39	Cressy-Longford Irrigation—provision of financial assistance for proposed water works.
40	War Service Land Settlement (A 1950)—power of Board to loan monies for waterworks.
41	Closer Settlement (A 1957)—power of Board to loan monies for waterworks.
42	Launceston Marine Board Loan (A 1951)—borrowing powers.
43	Traffic (A 1925)—disqualification of drivers, power of police officers, prohibition of driving motor vehicles while blood alcohol level exceeds 0.08%.
44	Subordinate Legislation Committee—establishment of Parliamentary standing committee on Subordinate Legislation and its functions.
45	Dentists (A 1919)—registration of dentists and dental mechanics.
46	Stamp Duties (A 1931)—provisions relating to hire purchase agreements, contracts of sale, adhesive duty stamps.
47	Public Service (No. 2) (A 1923)—increments and special allowances.
48	Constitution (A 1934)—introduction of triennial parliaments.

HANSARD

History

In 1803, Thomas Curzon Hansard became the first publisher of an unofficial series of records of parliamentary debates in Britain. The Hansard family continued the publication of debates until 1890, first as a private enterprise and later subsidised by government grants. The undertaking was sold in 1890 and passed through a variety of printers until 1909 when the Government took over the responsibility of publishing its debates.

Victoria was the first Australian State to have a Hansard service, while the Hansard of the Commonwealth Parliament dates from its opening session in 1901.

Tasmanian Situation

The Tasmanian Parliament is the only legislature in the British Commonwealth without an official parliamentary recording service: *Hansard*. The only records of debates are press reports in *The Mercury*, copies of which are printed separately for use in parliamentary and university libraries.

The history of attempts to introduce a reporting service in Tasmania is a long one, beginning in 1946 when a select committee reported that the installation of a Hansard would not be financially practicable. It recommended that the government consider entering a contract with *The Mercury* with a view to printing a weekly eight-page supplement. The report was referred back to the committee for further consideration.

In 1950, trial mechanical recording of House of Assembly proceedings was attempted. A web of microphones hung around the chamber transferred the debates to a building in the city where they were transcribed by shorthand typists. The system was found to be unsatisfactory, mainly due to the lack of

trained editors. Two weeks later a Joint Select Committee report was released supporting the introduction of an orthodox Hansard to cost \$23,000 (plus \$4,000 for printing). Should the necessary trained staff for this scheme be unavailable, the committee suggested a compromise of mechanical recording (also to cost \$23,000, plus \$10,000 for three or four first-class editors). The recommendations were rejected on grounds of cost by the Legislative Council which proceeded to appoint its own committee to investigate the matter.

In November 1951, this committee reported that no facilities existed for producing a full Hansard and estimated that this would cost about \$33,400 per year. It recommended the publication of a weekly magazine containing a reasonable synopsis of debates, to be supervised by a Parliamentary Standing Committee. The estimated annual cost was about \$10,000. Nothing further came of this report.

Recent Developments

In 1961, a proposal by the Leader of the Opposition to establish a Hansard at a cost of \$90,000 per year was defeated in the House of Assembly on the grounds of expense. Since 1961 other attempts have been made in both Houses and in November 1968, the Legislative Council unanimously proposed an investigation by the Joint House Committee into a suitable recording system for Parliament. This committee subsequently decided to write to the Northern Territory Legislative Council seeking details of its tape-recording system and to the South Australian Parliament for information about its conventional Hansard system. The committee proceedings were automatically halted when Parliament was dissolved after the May 1969 elections.

After the elections, the new Premier stated that his government would press ahead with its Hansard proposals. In July 1969, Parliament again referred the matter to the Joint House Committee.

OMBUDSMAN

Background

Function

The primary role of an 'Ombudsman' or 'citizen's defender' is to investigate the grievances laid against the operations of government. He has the authority to question all persons involved and has access to any documents and files pertinent to the investigation. He may then make recommendations or issue reprimands, but he is unable to apply the law. Where a breach of the law is discovered, he cannot initiate legal proceedings but should refer the matter to the public prosecutor. He also lacks authority either to exert control over the courts or Cabinet, or to reverse legal decisions.

The methods of investigation used and recommendations put forward by an ombudsman have proved to be remarkably effective. In a four-year period in the 1960s the Swedish ombudsman was responsible for 27 prosecutions and five disciplinary actions while in the same period he made 1,200 suggestions and reprimands.

Hogste Ombudsmannen

The office of ombudsman has its origins in Sweden in 1713 when the then monarch, Charles XII, was conducting extensive and expensive military operations against his eastern neighbours. Suspicious that Swedish taxes were being manipulated by Government officials and hence reaching pockets other than his own, Charles created the office of 'Hogste Ombuds-

mannen' (Supreme Procurator) to ensure that taxes were rendered to the king in full. In 1719, the office was renamed 'Justitie Kansler' (Chancellor of Justice), although the older title, 'Ombudsman', has continued as the more popular one to the present day.

In 1809, when Sweden's first constitution was introduced, the post of ombudsman was retained. However, he now became a non-partisan defender of the ruled, not the ruler. In the same year Finland was separated from Sweden although retaining many features of Swedish administration, including the office of ombudsman.

Denmark

Geographical proximity enabled Denmark to observe at first hand, and over a lengthy period, the successful role of the Swedish ombudsman. In 1955, the Danes appointed Professor Stephan Hurwitz, Professor of Criminal Law at Copenhagen University and a skilled and revered personality, as their first Ombudsman. The ensuing years have shown the appointment to have been an unqualified success. Any initial doubts and criticisms have since been dispelled; the public service itself, once the ombudsman's most vociferous critic, continually states its satisfaction.

New Zealand

The impending appointment of a Parliamentary Commissioner (Ombudsman) was continually attacked from several quarters, notably the public service; a genuine professional fear developed that no person of legal worth would be attracted to the office. However, the eventual appointee, Sir Guy Powles, had an impressive record as a brilliant lawyer, respected soldier and ex-diplomat, and the furore of criticism subsided somewhat.

After seven years, the beneficial effect of the ombudsman's role on government administration has been demonstrated. One notable aspect of the office has been his campaign for clearer communication between the government and the public. In his 1964 report the commissioner stated:

'A significant number of complaints would never have arisen except for defective or inadequate publicity, or lack of notification by departments relating to the rights or obligations of citizens. This is a matter that calls for unremitting attention, . . . particularly by those departments dealing directly with members of the public.'

A significant amount of success in this respect has been achieved with the use of well-designed publicity. The activities of the Ombudsman have gained the unqualified respect of the public service, once his greatest critic. The *New Zealand Public Service Journal* wrote in 1965:

'It is becoming increasingly clearer that the office of Ombudsman is not necessarily the trap for public servants which many of us feared . . . Indeed, the present incumbent is making it probable that public servants will make more and more use of the office for settlement of other unappealable grievances.'

Tasmania—Parliamentary Commissioner

Bill of 1969

A Bill first introduced into the Tasmanian Parliament in November 1969 envisages the establishment of a 'Parliamentary Commissioner for Administrative Investigations' (Ombudsman) with powers to investigate actions of government departments and authorities. It will be the first time such a Com-

missioner has been installed by a State in a federation rather than by a central government. The prorogation of Parliament at the end of the 1969 Session necessitated the re-introduction of the legislation in 1970.

The Commissioner is to be appointed by the Governor for a five-year term, at a salary to be determined by Parliament. Members of Parliament are ineligible for the office. When a vacancy occurs in the position, the functions of the Commissioner are exercised by the Public Service Commissioner.

Rules of Parliament may be made for the guidance of the Commissioner in the exercise of his functions. He may recommend the appointment of such staff as he considers necessary.

Investigations and Remedial Action

Complaints under the Act are to be made to the Commissioner in writing, not later than twelve months after the matter was alleged to have occurred. The Commissioner may refuse to investigate a complaint should he feel that it is trivial, frivolous or not made in good faith. Parliament or its committees, may refer matters to the Commissioner for investigation. Investigations may also be initiated by the Commissioner himself. It should be noted that the Commissioner will not be empowered to investigate actions by Cabinet, by legal representatives of the Crown or those declared by law as being final.

Before proceeding with an investigation, the Commissioner is to inform the principal officer of the department or authority concerned. He may enter any premises of the bodies involved, having given prior notice of his intention to do so, and may inspect any relevant documents. However, no person will be compelled to give any evidence or produce any document that he could not be compelled to give or produce before a court.

Investigations are to be held in private and information obtained will not be disclosed unless directly relevant to the complaint. If necessary, the Commissioner may apply to the Supreme Court for a decision concerning his jurisdiction to investigate any matter. Furthermore, no legal proceedings may be brought against the Commissioner or his officers without leave of the Supreme Court.

Upon completion of an investigation, the Commissioner is to make a report, and any recommendations he deems appropriate, to the principal officer concerned (also sending a copy to the responsible Minister). If, after a reasonable period of time, it appears that no remedial steps have been taken by the principal officer, the Commissioner may send a copy of the report and recommendations to the Premier, after which he may lay the particular report before Parliament.

Defeat

The Bill was defeated in the Legislative Council, however, the Government has stated that the bill will be re-introduced at a later session of parliament.

CASINO REFERENDUM

General

Gambling in Tasmania, as in other Australian States and Territories, is strictly controlled by legislation. Prior to the passage of the *Wrest Point Casino Licence and Development Act* 1968 through the Tasmanian Parliament, the principal Act covering gambling in Tasmania was the *Racing and Gaming Act* 1952. Dice games, the Australian game of two-up (swy) and roulette, a game

basic to casinos throughout the world, are all illegal under the provisions of this Act. The Act also prohibits the establishment of a casino or similar gaming house.

Special legislation was consequently necessary following the approach to the Tasmanian Government by Federal Hotels in early 1968 for a licence to operate a casino on the site of Wrest Point Hotel.

The *Wrest Point Casino Licence and Development Bill* 1968 was introduced to the House of Assembly on 3 October. Initial debate indicated that the legislation would pass the House with only a very small majority and faced possible defeat in the Legislative Council.

In view of the controversial nature and community implications of the issue, the Premier, Mr Reece, on 31 October, announced the decision to hold a referendum. The *Casino Referendum Bill* passed both Houses in November and the referendum took place on 14 December following intensive campaigns by the opposing groups.

Electors were asked to vote 'Yes' or 'No' on the following question: 'Are you in favour of the granting of a casino licence to Wrest Point Hotel, conditional on the proposed development of that hotel?' The final outcome of the referendum was: Yes 96,839; No 85,862; Informal 8,339. The 'Yes' vote represented 50.7 per cent of the total votes cast.

The *Wrest Point Casino Licence and Development Bill* was subsequently passed by each House and received Royal Assent on 24 December.

Voting Pattern

While the voting indicated only a slight majority for the 'Yes' vote over the 'No' vote, the voting pattern is of interest. *Of the valid votes cast* the two southern electorates, Denison and Franklin, which have the most to gain or lose by the establishment of a casino, voted 57.7 and 59.9 per cent respectively in favour of the casino. Wilmot, an electorate covering central and eastern Tasmania, voted 50.2 per cent in favour. The two more remote northern electorates opposed the casino. The vote in Bass was only 47.5 per cent for the casino, while in Braddon the vote was 49.6 per cent in favour.

The Casino Licence

The *Wrest Point Casino Licence and Development Act* 1968 not only gave the Treasurer the right to grant a casino licence to Federal Hotels Ltd but it also contained provisions which ensured strict control of the casino operations.

The granting of the licence is conditional upon Federal Hotels Ltd carrying out, within a specified time, a major developmental project at the Wrest Point Hotel, which includes erection of a circular residential tower containing approximately 196 bedrooms and capped by a revolving restaurant and construction of a casino building. The company's plan to erect a tower 210 feet in height made necessary the alteration of building regulations to exempt the project from the limit of 130 feet imposed on city buildings. This matter, together with public opposition to a land reclamation proposal to provide road access to the site, held up commencement of construction.

The casino licence must be renewed on 1 July of each year, the licence fee being \$2,500: renewal would be at the sole discretion of the Treasurer. The Treasurer also accepted the obligation not to issue any other company or

individual with a licence to operate a similar establishment in southern Tasmania for a period of 15 years after the original Wrest Point Casino Licence is granted unless the company fails to renew the licence, or the Treasurer refuses a renewal application.

Revenue

In addition to the \$2,500 annual licence fee, the State Government will levy a tax upon the monthly gross profits of the casino in accordance with the following rates:

Taxation Rates

Gross Profit for Month	Rate of Tax applicable to Gross Profit for each Day during that Calendar Month (a)
Less than \$25,000	5 per cent
\$25,000-\$125,000	5 per cent plus 0.25 per cent of every \$1,000 by which gross profit exceeds \$25,000 (b)
Greater than \$125,000 ..	30 per cent

(a) Gross profit is defined as the total amount wagered less amounts paid out in winnings.

(b) Adjusted to the nearest \$1,000.

The Treasurer must approve and may give directions concerning the casino's accounting procedures. He may also: (i) appoint persons to oversee operations of the casino; (ii) require the company to produce such information in relation to the casino operations as he thinks fit. These regulations not only help prevent contravention of the Act but assist in protecting the government's financial interest.

Launceston Proposal

A Sydney firm, Stocks and Holdings Ltd has submitted a preliminary proposal for a \$2.75m hotel-casino building on the old quarry site at Cataract Gorge. In August a second firm, John Batman International, applied for a casino licence. The company proposes the construction of a triple tower 17 storey hotel-casino costing \$3.1m.

THE GOVERNMENT OF 1971

The system of responsible government requires that the executive power of the State shall be exercised by the Cabinet; in exercising this power, the Ministers of the Cabinet are held responsible for the actions and administration of government departments and other governmental authorities which have been created for three basic purposes: (i) to put into practice the laws made by the Parliament; (ii) to give effect to the decisions of the Ministry; and (iii) to advise the Ministry on matters of policy.

The next section lists the departments and authorities under the various Ministers but the allocation of responsibility is subject to change and Cabinet has the power to vary it at any time. A detailed account of the work of the various departments and authorities appeared earlier in the *Year Book* series. Where a chapter reference is given, the reader will know that data on the department or authority appear elsewhere in this volume.

Premier, Treasurer and Minister in Charge of the Hydro-Electric Commission

Premier's and Chief Secretary's Dept The Hydro-Electric Commission (Ch. 8) Treasury Dept (Ch. 11)	Supply and Tender Dept Government Printing Office Government Insurance Office
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Attorney-General, Minister for Police and Licensing

Attorney-General's Dept Solicitor General's Dept Supreme Court and Sheriff's Dept (Ch. 9) Magistracy Dept and Court of Requests (Ch. 9)	Parliamentary Draftsman's Dept Public Trust Office Registrar General's Dept (Ch. 5) Prisons Dept (Ch. 9) Police Dept (Ch. 9) Licensing Court (Ch. 9)
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Minister for Education

Education Department (Ch. 9)

Minister for Lands and Works and Local Government

Dept of Public Works (Ch. 12) Dept of Lands and Surveys Rivers and Waters Supply Commission (Ch. 4) Metropolitan Water Board (Ch. 4)	Dept of Film Production Town and Country Planning Commission (Ch. 4) Local Government Office
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Deputy Premier, Chief Secretary and Minister for Tourism

Premier's and Chief Secretary's Dept. Audit Dept Public Service Commissioner's Dept Electoral Dept (Ch. 3) Dept of Labour and Industry (Ch. 10) Public Service Tribunal Dept (Ch. 10)	Tasmanian Grain Elevators Board (Ch. 4) Social Welfare Dept (Ch. 9) The State Library (Ch. 9) Fire Brigades Commission (Ch. 9) Rural Fires Board (Ch. 9) Miners Pensions Board (Ch. 11) Dept of Tourism and Immigration
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Minister for Agriculture and Forests

Dept of Agriculture (Ch. 6) Inland Fisheries Commission (Ch. 7) National Parks and Wild Life Advisory Council	Agricultural Bank of Tasmania (Land settlement function) (Ch. 6) Forestry Dept (Ch. 9)
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Minister for Development, Housing and Fisheries

Housing Dept (Ch. 9) Directorate of Industrial Development (Ch. 8)	Agricultural Bank of Tasmania (Housing function); (Ch. 9) Sea Fisheries Division (Ch. 7)
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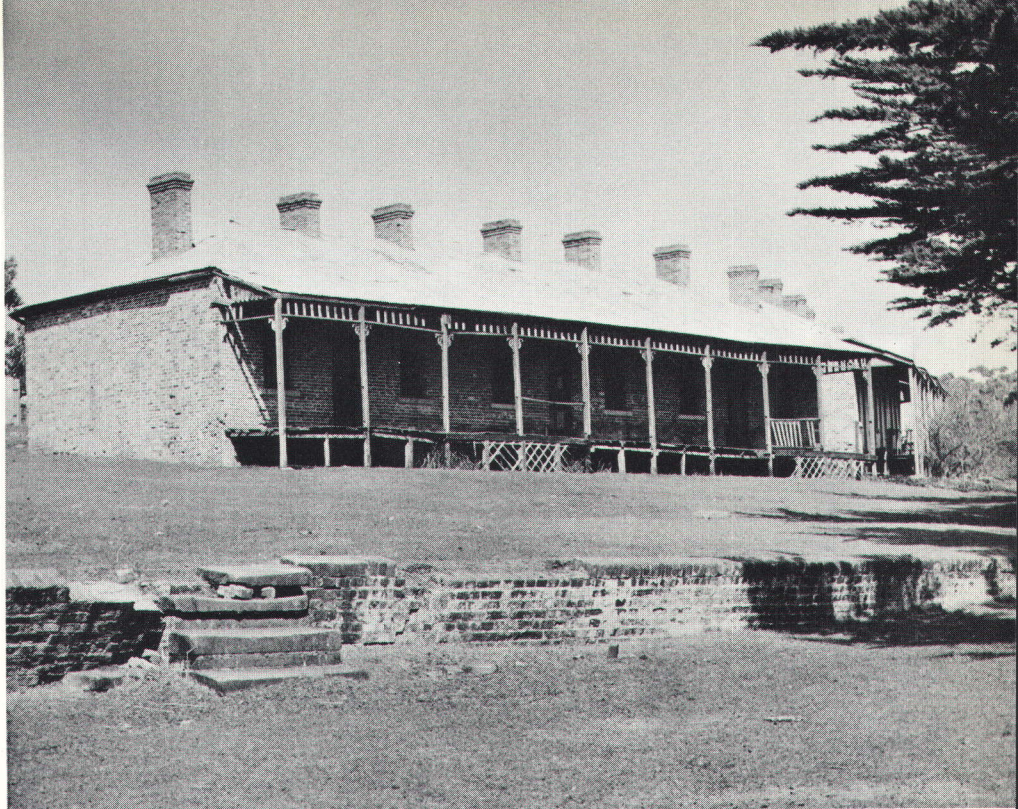
Minister for Transport, Racing and Gaming and Mines

The Transport Commission (Ch. 12) Metropolitan Transport Trust (Ch. 12)	Racing Commission (Ch. 11) Mines Dept (Ch. 7)
--	--

Minister for Health and Road Safety

Dept of Health Services (Ch. 9)	Mental Health Services Commission (Ch. 9)
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- (a) The Supply and Tender Department, the Government Printing Office and the Government Insurance Office are listed as falling within the responsibility of the Treasurer but, by arrangement, they have been under the ministerial control of the Deputy Premier.



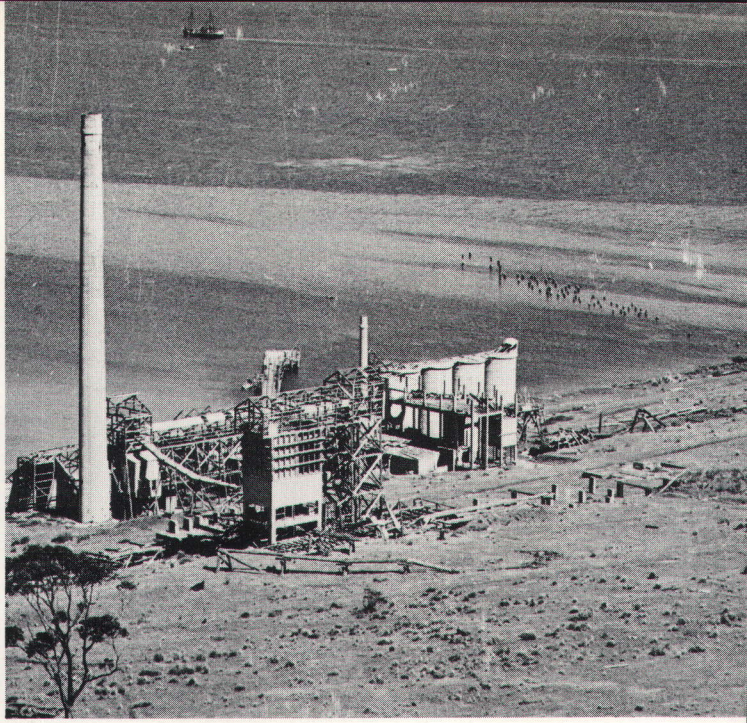
Officers' Quarters, Darlington

(Sir Ralph Wishaw)

Commissariat Store, Maria Island

(Sir Ralph Wishaw)





Abandoned cement works, Darlington, Maria Island

(Mercury)

Powder Magazine, Port Arthur

(Dept of Film Production)



Chapter 4

LOCAL GOVERNMENT

GENERAL DESCRIPTION

Historical

Introduction

In Tasmania, the functions of local government are more restricted than in some other countries, as the State Government takes direct responsibility for important services such as the police, education, housing, public transport, etc. This peculiarity is not confined to Tasmania and is encountered in the other Australian States, where central control is exercised over functions often delegated to local government authorities in overseas countries; the origin of this tendency probably lies in early colonial history when the continent was virtually empty but the apparatus of government existed at each of the new coastal settlements (Sydney, Hobart, Perth, Melbourne, Adelaide, and Brisbane, in order of age). In the Australian situation, strong central administrations came first and local government was a much later growth, the initiative for its creation often coming from the central administration itself in the respective colonies.

The development of local government in Tasmania falls into three distinct phases:

Hobart and Launceston

Hobart Town was granted elected commissioners in 1846, and under an Act of 1852, both Hobart and Launceston were given elected municipal councils. In 1857 the City of Hobart was incorporated, as was the Town of Launceston a year later. Launceston was proclaimed a city in 1888. For the next 76 years, these were the only two cities in the State, but in 1964 the number was increased to three when Glenorchy was granted city status.

The form of local government in Hobart and Launceston is governed by separate corporation acts for each authority; in the case of Glenorchy, however, its operation as a city is provided for in the *Local Government Act 1962*.

Rest of State before 1906

Prior to the passing of the *Local Government Act 1906*, there was a great variety of elected Boards, Trusts, etc. in Tasmania, each in control of a district for certain specified objects, but they were all abolished by that Act. The principal local authorities were:

(i) *Road Districts*: The main legislation was the *Roads Act 1840*, the *Cross and Bye Roads Act 1851* and the *Main Roads Act 1880*. The general effect was to partition the State into districts and to set up elected bodies of trustees whose responsibility was confined to roads. In 1907, the last year in which the road trusts operated, there were 105 in existence.

(ii) *Rural Municipalities*: Under the *Rural Municipalities Act 1858*, any town, electoral, police or road district could be proclaimed a rural municipality with a council elected by the ratepayers. By 1865, 18 rural municipalities had been

constituted and the whole State (excluding Hobart, Launceston and Tasman Peninsula) was divided into 30 areas, each to be a municipal district; this plan for the future did not make much progress for in 1907, the last year in which rural municipalities operated, there were only 19 in existence.

(iii) *Town Boards*: Under the *Town Boards Act* 1884, the Governor could constitute a town, provided that it was not situated within the boundaries of a rural municipality. Trustees elected by the ratepayers exercised the provisions of the Police Act with regard to the health and improvement of towns, and in 1885 every town was declared to be a road district. In 1907, the last year of operation of town boards, there were 23 in existence.

Other Authorities: The type of local authority described in the previous sections by no means covers the complete field. Examples of other authorities include fruit boards, rabbit trusts, boards of health, boards of works, recreation ground trusts and school boards. The general picture, to say the least, was one of complexity and confusion; the main need was obviously a reduction in the number of separate authorities and the creation of municipalities with responsibility for *all* local government functions in their respective areas. A simplification along these lines was achieved by the *Local Government Act* 1906.

Rest of State after 1906

At present, local government functions throughout the State, the relevant bodies being the Hobart, Launceston and Glenorchy city corporations and 46 municipalities. The genesis of this framework is found in the *Local Government Act* 1906 under which a Commission was appointed to divide the State into not more than 60 districts and to subdivide each district into not less than three nor more than five wards, each ward including as nearly as practicable an equal rateable area. The Commissioners were empowered to adjust the boundaries of adjoining municipalities, provided that in so dividing the State any town might be deemed to be included or excluded from such boundaries. The cities (at that time, Hobart and Launceston) were not to be included, and were exempt from the provisions of the Act.

The Commissioners, in terms of the Act, divided the State into 49 districts but the later absorption of the municipalities of Queenborough and New Town into the City of Hobart reduced the number to 47; the granting of city status to Glenorchy in 1964 resulted in the present total of 46. When the Commissioners deliberated after the passing of the Act of 1906, the population of the State was under 190,000 and their decision to create 49 districts may seem somewhat extravagant. But in 1906, the motor car was still a novelty, roads were poor and the creation of fewer but larger districts would have made it extremely difficult for the elected councillors to meet with any regularity, or for municipal inspectors, etc. to travel in their area of supervision. In short, the districts were designed with the horse as the limiting factor.

Prior to the passing of the Act in 1906, the State had been split up into districts of different kinds, each controlled for a specific purpose by a Board, Trust or Council. The effect of the Act was to abolish all the separate districts as well as the rural municipalities and town boards and to set up new authorities, uniformly constituted and exercising similar functions.

Since the Act of 1906, there has come into effect a large body of legislation affecting local government and there has been some widening of function. Accordingly a new consolidating Act, the *Local Government Act* 1962, was passed and is now in operation.

City of Hobart

Description

The City of Hobart (42°54'S; 147°21'E) is the seat of the State Government and capital of the State of Tasmania. Founded in 1804, Hobart is the second oldest capital city in Australia.

The population of the City of Hobart was 53,257 and of the Hobart Metropolitan Area 119,469 at the Census of 30 June 1966. Estimated population at 30 June 1969 for the City of Hobart was 52,810 and for Urban Hobart (formally known as the 'Hobart Metropolitan Area') 124,880. Further detailed information on the population centred on Hobart is contained in Chapter 5, 'Demography'.

Hobart City, covering 30.8 square miles, is built on the plains and foothills below Mt Wellington (4,166 feet) on the west, with the River Derwent on the east. The city has a first-rate deep-sea port where, during World War II, ships of up to 50,600 tons berthed without assistance. The eight mile road to the summit of Mt Wellington passes through an enormous natural park which is the source of part of the city's water supply. Hobart has a mild climate, and its attractions include its mountain, picturesque harbour, broad four-lane-bridged river, early colonial architecture, the Queen's Domain and nearby beaches.

Hobart City Council

The present council consists of 12 aldermen, including the Lord Mayor and Deputy; elections are held every two years when six aldermen retire. The Lord Mayor and Deputy Lord Mayor are elected by the ratepayers at each biennial election; only aldermen of two years, or more, service are entitled to stand for election to these two offices. Candidates do not stand for wards, and all ratepayers can vote for the filling of vacancies. The most recent elections were held in June 1966, 1968 and 1970. An amendment to the *Hobart Corporation Act* in 1967 required electors to vote for at least six candidates in choosing aldermen; previously an elector could cast a valid vote even if he only chose one candidate (although there were six vacancies to fill).

Historical Development

In 1846, Hobart was divided into five wards, each electing three commissioners to deal with lighting, draining and paving; an elected municipal council was established in 1852 and in 1857 Hobart Town was proclaimed a city. Its graceful Town Hall was completed in 1866. The city was enlarged by the absorption of Glebe Town, Mt Stuart, Wellington, Queenborough and New Town between 1907 and 1920. The number of aldermen was last varied in 1934 (to 12), the year in which the title Lord Mayor was bestowed by Royal Command.

Local Government—Present Organisation

Authority and Functions

The authority for, and the forms of, local government are prescribed entirely by State legislation and such legislation has largely been consolidated in the *Local Government Act* 1962. Hobart and Launceston cities operate under their own separate corporation Acts but the other authorities, including the City of Glenorchy, operate under the Act of 1962.

The functions of the municipalities are set out in broad general terms in Section 176 of the *Local Government Act* as:

'A Municipality: (a) may for the welfare and good government of its district and the inhabitants thereof: (i) make by-laws; (ii) undertake, make and maintain works, buildings and services; and (iii) order and dispose the common affairs of its members; and (b) shall cause the Queen's peace to be kept and maintained within its districts.'

Particular authority is given by Section 180 for a council clerk to be a Deputy Clerk of the Peace, Registrar of the Court of General Sessions and Clerk of Petty Sessions in his municipality.

Administration of Justice

This responsibility of the municipality to administer the lower courts of justice is confined to Tasmania and it would appear to be a carry-over from the very early days of local government when the municipality was required to provide the police force as well. In all other States, the administration is in the hands of a State department. The practice here would now appear to be continued by reasons of expediency. (It should be noted that the process of removing this function from the municipalities has already commenced and the lower courts in the cities of Hobart and Glenorchy and the municipalities of Clarence and Kingborough are administered by the State. It should also be noted that where municipalities administer the courts, they receive all fines into their revenue, and in some instances the council clerks receive additional salary for this court work.) In addition, by certain Acts, the municipalities are given specific responsibilities, e.g. *Health Act*, *Local Courts Act*, etc.

Electors

Persons eligible to vote in local government elections consist of owners or occupiers of rateable land and their spouses together with ex-servicemen, all of whom must be natural born or naturalised British subjects over the age of 21 years.

In Tasmania, a system of plural voting is employed. The number of votes per elector is proportional to the assessed annual value of the particular property in accordance with the following rates:

- (a) less than \$200—one vote
- (b) \$200 to \$399—two votes
- (c) \$400 to \$799—three votes
- (d) \$800 and above—four votes

Each spouse elector and ex-service elector has one vote.

Victoria and Western Australia have similar methods of plural voting for local government elections, while New South Wales, South Australia and Queensland employ the principle of a single vote per owner-occupier. In States with plural voting, entitlement scales are comparatively low (having been set many years ago) so that a majority of electors are actually entitled to the maximum number of votes. This gives an effect similar to the one-man-one-vote system.

An elector in Tasmania may exercise no more than four votes in any one municipal election except: (i) in the case of subdivided municipalities, where elections for each ward are treated as separate; and (ii) where he is voting on behalf of another person or organisation (e.g. a corporation, estate, absentee owner, convict, unnaturalised alien) in which case he may exercise up to twelve votes in each ward.

In no Australian State are unnaturalised aliens, who are owner-occupiers, eligible to vote at local government elections; Tasmania is the only State with a provision for aliens to have another person vote on their behalf.

Councillors

A councillor must be an elector of and either reside in, or carry on business in, the municipality and he is subject to disqualification for certain breaches of conduct. He is elected for three years and one-third of the council retires each year. Councils may comprise 6, 9, 12 or 15 councillors. Councils annually elect their Warden, Deputy Warden and Treasurer. (The electors of the City of Hobart elect the Lord Mayor and in Launceston and Glenorchy the electors elect the Mayor.) The office of Warden is comparable with that of the Mayor of a town or the President of a shire in other States.

Government Intervention

For any of a number of reasons, the Minister administering the *Local Government Act* may consider it necessary to recommend suspension of the elected councillors and the appointment of commissions, or in certain cases an administrator, to carry on municipal government. In 1970, Kingborough, Clarence and Zeehan were administered by multi-member commissions, and St Leonards by an administrator. Commissioners and administrators are appointed by the Governor. Provision exists under the Act for the restoration of elected councils, subject to certain conditions being satisfied.

Cities, Municipalities and Towns

In Tasmania there are only two categories of local government: a municipality or a city. The Act provides for the establishment of towns and indicates requirements before such towns are proclaimed, but these are not municipal administrative units. It would seem that the only reason for the proclamation of an area as a town is to bring into action certain provisions relating to rating and to building requirements. Before a municipality can petition for a town to become a city, the town must have had, for five years before the petition, a population of not less than 20,000.

Other than this population requirement for a city, there are no provisions such as exist in some of the other States and in Canada for enlarging or diminishing the status of municipalities to accord with increasing or decreasing population.

Sources of Revenue

There are four main sources of revenue, namely rates, government grants, business undertakings and services. The rates are levied at so much in the dollar on the assessed annual value without any fixed maximum. The amount of rates paid is, generally speaking, unequal to the cost of supplying the services which have, in the last thirty years, increased considerably in both range and expense. The government grants are a recognised means of increasing the revenue of municipalities.

The municipalities are unable to collect any rates for land owned by the Crown but where services are provided, the Crown does pay for such services. Grants and subsidies are made, generally speaking, to assist the municipalities to meet the overall costs of municipal government and sometimes the grant is made to assist in a particular project. Grants are sometimes made to induce the councils to undertake the provision of certain services or to develop those services. Grants may also be made in order to assist in paying the costs of particular services which are shared by two or more adjoining municipalities.

Earnings from business undertakings include charges for the supply of water and for the use of abattoirs. Some of these businesses show a small profit but, in most cases, the fees demanded are usually only just sufficient to cover the cost of providing the services.

In the matter of water supply, where a number of local government areas could be served from a common source, the State Government did not consider a system of individual grants adequate and created two statutory authorities to act as 'wholesalers', the affected local government authorities acting as 'retailers'. This development is described later in the chapter under 'Water Supply and Sewerage'.

Municipal Commission

Provision was also made in the *Local Government Act* 1962 for the appointment of a commission, to be called the Municipal Commission. The Commission is a permanent body, whose members hold office for five years. The prime function of the Commission was to investigate the question of existing boundaries and municipal finances.

In October 1965, the Commission issued, in the one publication, seven reports containing, as principal recommendations, proposals for a reduction in the number of local government authorities from 49 to 20. Several municipal bodies appealed to the Supreme Court against the validity of the report and were given the right to appeal to the High Court of Australia. The High Court subsequently upheld the report's validity. However, since its election in 1969, the Bethune government has announced its intention to reconstitute the Commission with wider terms of reference.

For a more detailed account of the Report of the Municipal Commission, refer to the 1970 and earlier editions of the *Year Book*.

PLANNING AUTHORITIES

Town and Country Planning Commissioner's Office

Introduction

Before the Federal Labor Government took office in 1941, governments (both State and Commonwealth) had shown little interest in town planning legislation. The war-time Federal Labor Government encouraged activity in this field and in the period 1944-45 four States, including Tasmania, passed legislation with provisions largely based on existing British and New Zealand planning statutes.

Passed in 1944, the Tasmanian *Town and Country Planning Act* only applied to areas which were proclaimed as a result of municipal requests. The Act created the position of Town and Country Planning Commissioner and made him responsible to the Minister for Lands and Works; any decisions made by the Commissioner are subject to ministerial approval. In 1962, the *Town and Country Planning Act* was repealed and its provisions incorporated in PART XVIII of the *Local Government Act* 1962 under which the powers of the Commissioner were broadened so that he could require any municipality to prepare a planning scheme.

The Governor appoints the Commissioner for a period not exceeding five years and the Commissioner's tenure of office may be terminated at any time by the Governor. The Commissioner is also a member of the following bodies: the Municipal Commission; the Building Regulations and Nomenclature Boards; the Co-ordination of Mapping Committee.

The Town and Country Planning Commissioner's office exercises statutory power in its own right, but for administrative convenience it is regarded as a branch of the Public Works Department. The office consists of the Commissioner, the Deputy Commissioner (a position created in 1963), and a small staff. The Town and Country Planning Commissioner's office should not be confused with the Southern Metropolitan Master Planning Authority, described next in this chapter.

Functions

Briefly the function of the Commissioner is to approve municipal planning schemes and to certify that subdivision proposals are in accordance with the schemes and meet the other requirements as laid down in the *Local Government Act* 1944. Also the Commissioner may require: (i) any municipality to prepare a planning scheme; (ii) two or more municipalities to co-operate in the preparation of a master planning scheme; he is empowered to specify the completion date for such schemes. If the municipality fails to comply with the Commissioner's request, then the Commissioner may prepare a scheme for that municipality and the municipality must meet all the preparation costs of the scheme. A municipality may voluntarily prepare a planning scheme and submit it to the Commissioner for approval. If a scheme is prepared for an area to which a master plan applies and is submitted to the Commissioner for approval then the Commissioner, before giving a decision, must consult the authority which prepared the master plan.

The Commissioner is also empowered to deal with objections to any planning scheme, including master plans prepared by a master planning authority.

In relation to subdivisions, the Commissioner's approval is required because all activities of this nature, other than rural subdivisions, are subject to *PART XVIII* of the Act.

Legal Procedure

After the Commissioner has given provisional approval to a plan, the municipality must give public notice of the scheme and place a copy in the municipal office for public inspection. The period allowed for objections is three months from the date of public notification of the plan. Objections may be lodged by: (i) any owner or occupier of rateable property affected by the plan; (ii) the municipality, which may only object if the plan has been altered or prepared by the Commissioner, other than at the request of the municipality. Should the municipality request a formal hearing then the Commissioner must comply with the request. The Commissioner has power to provisionally determine an objection and after dealing with all objections, he passes the plan to the Minister for Lands and Works for final approval. If the Minister gives his approval, the plan is then sealed by the Commissioner and becomes effective from a date specified by him. When a plan is sealed, the municipality must abide by the scheme and enforce its observance. A sealed scheme can only be modified or altered with the Commissioner's approval.

Scope of Plan

A town and country planning scheme may deal with the following planning matters: (i) all roads (public and private), streets, footpaths, building lines and land adjacent to foreshores; the plan should cover both alteration to existing roads, streets, etc. and proposed new roads, streets, etc.; (ii) positioning of buildings and the general nature and design of buildings; (iii) preservation of land for afforestation, recreation and public works; (iv) preservation of

objects of historical or natural interest; (v) sewerage and drainage; (vi) lighting and water supply systems; (vii) specification of the use to which areas may be put; (viii) provision of amenities; (ix) stages of development; (x) ancillary or consequential works.

Southern Metropolitan Master Planning Authority

Introduction

The Southern Metropolitan Master Planning Authority is responsible for planning the development of an area best defined broadly as a triangle based on Pontville (Brighton Municipality), Snug (Kingborough Municipality) and Seven Mile Beach (Clarence Municipality), which includes the Cities of Hobart and Glenorchy and also those parts of Brighton, Kingborough and Clarence Municipalities which are likely, in the future, to experience urban expansion because of their proximity to Hobart.

Establishment of Authority

In 1954, a 'Hobart Metropolitan Planning Committee' adopted resolutions to the effect that a planning authority should be set up, that a 'Master Plan' should be prepared and that the plan should provide for an eventual population of 250,000 persons in the 'S.M. area'. (The Census population of Hobart and Suburbs in that year was 95,206 persons.) The five participating municipalities and cities indicated that they were prepared to support such an Authority and struck special town planning rates of up to 0.208 cents in \$. The necessary legislation setting up the Southern Metropolitan Master Planning Authority was passed in 1957.

Representation and Finance

The *Local Government Act* 1962 prescribes that each city shall have the right to appoint three representatives and each municipality two. The authority is also empowered to make contracts, accept trusts of properties for town-planning purposes, make by-laws for domestic purposes and obtain a town-planning contribution based on the annual value of all rateable property.

Functions of the Authority

The main functions of the Authority are: (i) the technical and legal preparation of a master plan for the prescribed area (the detailed planning nevertheless remaining the responsibility of each constituent municipality or city); and (ii) the conduct of surveys and studies to facilitate the preparation of the master plan.

The Master Plan

The Master Plan 1962 was put up for statutory exhibition (for a compulsory period of three months) and objections were considered. The Authority withdrew its Master Plan 1962 in 1963 and the State Government decided to undertake a full transportation study, the results of which became available late in 1964. An interim 'Townplanning Policies Map 1964' was issued as a guide to member councils in their detailed planning and to other authorities concerned with development in the Southern Metropolitan Area while the Master Plan is being revised.

In addition to recognising the influence of transport services on development, the Master Plan gives special attention to the provision and location of industrial areas and to the urban fringe areas where unco-ordinated development has taken place.

Tamar Regional Master Planning Authority

The Tamar Regional Master Planning Authority was established in September 1969, following a petition to the State Government by the City of Launceston and the Municipalities of Beaconsfield, George Town, Lilydale, Longford and St Leonards. Westbury and Evandale, two essentially rural municipalities, declined to join the Authority.

The Authority consists of three representatives from the Launceston City Council and two from each of the member municipalities. Financial support is given by the constituent councils, in proportion to the annual value of rateable municipal property.

The principal objective of the Authority is the unified promotion and development of the Tamar Valley region and to this end a consortium of mainland town planning consultants has been engaged to produce a preliminary plan. Once completed, this plan would be further developed into a statutory plan, either by private consultants or by planning staff directly appointed by the Authority.

Transportation Studies

Hobart

The 1964 Hobart Area Transportation Study examined traffic problems in detail, and brought to public attention the need for greatly increased expenditure in meeting these problems. The findings of the study were that metropolitan traffic will increase nearly 100 per cent during the next 20 years and that a number of major new roads will be required. The proposals resulting from the study were estimated as likely to cost \$50m spread over 20 years. The State Government has offered to meet most of the costs of the freeways and expressways while the councils will finance the balance.

The first stage of the Southern Outlet Road, from Hobart to Kingston, was opened to traffic in December 1969. Construction is progressing towards Picket Hill on the second stage of the expressway.

Construction of the Eastern Outlet (a freeway from the Tasman Bridge to Hobart Airport) has commenced and the first stage (Warrane to Cambridge) is well advanced.

During 1970 the Transportation Study was updated to make allowance for changes in traffic priorities since the 1964 investigation.

Launceston

The realisation that existing traffic problems in the Launceston area would become more acute with the passage of time led to the undertaking of a traffic survey during 1967. This survey closely paralleled the 1963 Hobart study.

The purpose of the survey was to predict the transportation needs of urban Launceston some twenty years in the future, and to determine what improvements to the existing transportation system would be appropriate to meet these needs.

The main features of the highway system proposed as a result of the survey are: a new bridge across the South Esk at Royal Park; a north-south Expressway along the east bank of the Tamar; a second Expressway, also running north to south, in the valley of the North Esk, curving westwards to the Bass Highway at Youngtown; and connecting roads (one-way in the central business district and two-way in the outer areas) between the major elements of the system.

FINANCE

Introduction

For many years, local government in Tasmania operated in 49 areas, comprising 47 municipalities and the cities of Hobart and Launceston. As from 24 October 1964, a third city, Glenorchy, came into being and the number of municipalities fell to 46. There are no unincorporated areas.

Local government finance statistics in Tasmania are compiled by the Bureau of Census and Statistics from the following sources:

(i) *The 46 municipalities*: each municipality is required to submit annually to the Auditor-General a 'Statement of Accounts' in pursuance of section 329 of the *Local Government Act* 1962; copies of these statements are made available to the Bureau. The 'Statements of Accounts' are compiled by the municipalities on a *cash receipts and payments* basis and two basic types of accounts are distinguished, namely revenue and loan accounts.

(ii) *The Cities*: the Cities of Hobart and Launceston submit annually to the Auditor-General statements of accounts compiled on an *income and expenditure* basis but analysed on a cash receipts and payments basis. Glenorchy, however, still submits a municipal-type statement.

The term 'local government' is employed only in relation to the municipalities and city corporations. Details of *semi-government* authorities concerned with water supply appear in the last section of this chapter; such authorities provide bulk water but reticulation and sale to householders remains a local government function.

Value of Rateable Property

Revenue for local government authorities in Tasmania is derived principally from rates levied on the annual value of property. For any property, the annual value is what it would bring annually if it were rented; the valuer is guided by actual rentals in operation at the time he makes his estimate.

Under the *Local Government Act* 1962, rates may be based on annual value, unimproved value (i.e. value of land only), the capital value (i.e. value of land plus improvements) or finally upon a composite value incorporating the unimproved value plus some arbitrary proportion of the value of improvements. In Tasmania, it has been usual for rates to be based on annual values despite isolated and unsuccessful campaigns in favour of taxing on unimproved value only. In estimating annual value, the valuer is taking into account not only the land but also the improvements (e.g. buildings) so there is, in actual fact, a close relation between total capital value of any property and its assessed annual value. The *Land Valuation Act* 1950 fixes a minimum relationship between annual value and capital value (four per cent) but sets no maximum.

The following table shows the total value of all rateable properties in the State and gives individual details for local government authorities with total capital value exceeding \$20m (there were eighteen in 1968-69).

As might be expected, the City of Hobart had a greater total capital value than any other local government area. In 1968-69 the capital value of Hobart (\$293.93m), was approximately twice that for Launceston (\$146.81m). The smallest 31 municipalities had, in total, a capital value of \$300.52m. Of the 49 municipalities in Tasmania only three had a capital value of more than \$100m, one of more than \$90m, two more than \$60m and one more than \$40m. The remainder were below \$40m.

Value of Rateable Properties: Tasmania and Selected Municipalities and Cities
(\$ million)

Municipality or City	Last Revaluation (a)	1966-67		1967-68		1968-69	
		Total Capital Value	Rateable Annual Value	Total Capital Value	Rateable Annual Value	Total Capital Value	Rateable Annual Value
Hobart (City) ..	1963	286.47	17.48	286.82	17.49	293.93	17.88
Launceston (City) ..	1965	142.85	11.24	144.42	11.41	146.81	11.57
Glenorchy (City) ..	1968	116.47	6.84	120.23	6.84	144.83	9.52
Clarence ..	1964	87.15	4.46	90.39	4.51	94.01	4.37
Devonport ..	1967	52.97	3.08	69.24	3.99	72.83	4.21
Burnie ..	1965	63.32	4.06	64.34	4.16	67.89	4.33
St Leonards ..	1966	38.36	2.35	39.77	2.47	42.10	2.60
Kingborough ..	1968	27.63	1.31	26.34	1.24	36.16	1.84
New Norfolk ..	1966	31.77	1.29	32.27	1.32	33.22	1.38
Circular Head ..	1968	23.28	1.05	23.69	1.07	32.38	1.56
Ulverstone ..	1964	28.99	1.51	29.78	1.56	30.72	1.61
Beaconsfield ..	1964	27.70	1.61	28.55	1.66	29.84	1.72
Wynyard ..	1967	23.89	1.19	27.78	1.50	28.90	1.56
Westbury ..	1968	17.86	0.75	18.07	0.75	23.81	1.07
George Town ..	1967	16.89	0.93	21.86	1.36	22.53	1.42
Longford ..	1963	21.12	1.02	21.33	1.03	21.41	1.04
Deloraine ..	1966	19.51	0.86	19.57	0.86	20.21	0.96
Lilydale ..	1966	18.78	1.11	19.37	1.15	20.00	1.17
Remaining Municipalities ..	..	232.81	10.38	275.75	12.40	300.52	13.51
Total Tasmania ..	..	1,277.82	72.52	1,359.60	76.76	1,462.12	83.30

(a) Effective from 1 July of year shown.

System of Valuation

The valuation of property is carried out by a State Government authority, the Land Valuation Branch; its valuations form the basis for two distinct taxes: (i) land tax collected by the State on the basis of unimproved land values; (ii) rates collected by local government authorities on the basis of assessed annual values. Since it is impossible to value all the properties within the State in the course of a single year, valuation is carried out on a rotational basis, e.g. Kingborough valued in 1961 and again in 1968; Circular Head valued in 1963 and again in 1968.

The table that follows shows the total value of rateable property over the last ten years:

Total Rateable Property Valuation in Cities and Municipalities (a)
(\$ million)

Year	Unimproved Value	Value of Improvements	Capital Value	Year	Unimproved Value	Value of Improvements	Capital Value
1959-60 ..	179.0	560.4	739.4	1964-65 ..	290.5	849.9	1,140.4
1960-61 ..	186.0	622.2	808.2	1965-66 ..	317.7	893.4	1,211.1
1961-62 ..	193.6	676.5	870.1	1966-67 ..	329.1	948.7	1,277.8
1962-63 ..	216.1	726.8	942.9	1967-68 ..	351.7	1,007.9	1,359.6
1963-64 ..	271.6	803.5	1,075.1	1968-69 ..	375.0	1,087.1	1,462.1

(a) As valued by State Valuation Branch.

In the period covered by the table (1959-60 to 1968-69), the following increases have been recorded: (i) in unimproved value, 109 per cent; (ii) in value of improvements, 94 per cent; (iii) in capital value, 98 per cent.

Total Receipts and Payments

As from 1968-69, a new system of analysis was introduced, but it has not yet been possible to apply the system to revise figures for previous years. Consequently the 1968-69 analysis, in some particulars, is not strictly comparable with that for earlier years. It is expected that a consistent five-year series may become available when 1969-70 accounts are analysed.

The next table shows total receipts and payments of the Tasmanian municipalities and cities:

Local Government Authorities
Total Receipts and Payments—All Funds
(\$'000)

Year	Open- ing Bal- ance (a)	Receipts				Payments			Surplus (+) or Deficit (-)
		Loan Accounts (b)	Revenue Accounts (c)	Special Accounts (d)	Total	Loan Accounts	Revenue Accounts (e)	Total	
1957-58	985	4,110	7,998	-143	11,965	3,238	7,902	11,140	+825
1958-59	1,810	3,622	8,836	+ 99	12,557	3,542	8,836	12,378	+179
1959-60	1,989	5,308	9,782	+ 3	15,093	4,670	9,762	14,432	+661
1960-61	2,650	5,420	10,868	-155	16,133	5,260	10,924	16,184	- 51
1961-62	2,599	6,447	12,098	+ 39	18,584	5,658	11,778	17,436	+1,148
1962-63	3,747	6,873	13,764	+690	21,327	7,212	13,256	20,468	+859
1963-64	4,606	7,268	14,792	+242	22,302	7,431	14,654	22,085	+217
1964-65	4,823	7,273	16,250	(e)	23,522	6,354	16,176	22,530	+993
1965-66	5,816	7,579	17,395	(e)	24,974	8,342	17,085	25,426	-452
1966-67	5,369	7,680	r19,595	(e)	r27,275	8,091	r19,069	r27,159	+116
1967-68	5,922	9,604	r21,235	(e)	r30,839	9,364	r20,858	r30,222	+617
1968-69	6,936	8,689	23,478	(e)	32,167	8,616	22,790	31,405	+761

(a) Bank balances (less unrepresented cheques), securities and cash on hand.

(b) Includes loan raisings, sales, capital grants received, etc.

(c) From 1966-67, grants from the Metropolitan Water Board to cover working expenses have been included in the total and not off-set against payments.

(d) Net movement in special accounts.

(e) Special accounts analysed and included under loan or revenue accounts.

Business Undertakings

In the analysis of the local government authorities' accounts a distinction is drawn between 'ordinary services' and 'business undertakings'.

The classification 'business undertaking' is used in Australian local government finance statistics to include municipal tram and bus services, municipal electricity supply (generation or distribution), municipal water and sewerage schemes, municipal abattoirs, etc. In Tasmanian local government finance statistics, electricity supply ceased to appear as from 1948-49 (the Hydro-Electric Commission is now the sole supplier). Municipal tram and bus services ceased to appear as an item in 1955-56, the Metropolitan Transport Trust having acquired the city transport services operating in Hobart and Launceston. Consequently, the only activities under the heading of municipal 'business undertakings' in current Tasmanian statistics relate to water supply, sewerage and abattoirs.

Rate Collections

There is considerable diversity in the types of rate imposed by individual local government authorities. In Hobart, virtually all properties are subject to the one consolidated rate and a similar position exists in Launceston; in most municipalities, however, the property holder, after being charged the basic general, road, light and health rates, is subject also to additional rates assessed according to the location of the property and the nature of the services provided (e.g. a fire brigade rate for properties which are close enough for fire brigade protection, a water rate where the service is available). Property holders in a particular district may be called upon to pay a special rate for an improvement peculiar to the district (e.g. a reserves and recreation rate to finance a sports ground or a garbage rate to finance a disposal service).

It should be noted that the rates analysis in the next table does not dissect the ordinary rates of Hobart and Launceston cities; their ordinary rates are all entered as 'general' but their business undertaking rates are dissected under 'water' and 'sewerage'.

The following table shows details of the rates collected in Tasmania during a three-year period:

Rates Received (a) by Local Government Authorities
(\$'000)

Particulars	1966-67	1967-68	1968-69
Ordinary Rates (b)—			
General (b)	3,968	4,522	4,889
Light	226	227	230
Road	3,049	3,381	3,647
Health	273	298	332
Sanitary and Garbage	214	222	233
Reserves and Recreation	523	633	720
Halls	72	78	81
Library	90	100	120
Fire Brigade	64	81	122
Drainage	(c)	74	92
Other	105	24	29
Total	8,584	9,638	10,495
Business Undertakings' Rates—			
Water	2,697	2,952	3,395
Sewerage	1,548	1,761	1,963
Total	4,245	4,712	5,358
Grand Total.. .. .	12,829	14,351	15,854

(a) Net of refunds.

(b) Where a single consolidated rate has been charged (as in Hobart and Launceston), the collection has been dissected between 'ordinary' and 'business undertakings' but the 'ordinary' component has been entered, without further analysis, as 'general'.

(c) Rates levied for the purpose of 'drainage' included in 'other'.

Revenue of Local Government Authorities

The biggest proportion of local government revenue comes from rates (67 per cent in 1968-69) and these are a direct charge on owners of property.

After rates, the next most important sources of revenue are: (i) Government grants and refunds; and (ii) charges for public works and services. Among sources of revenue are listed 'council properties'; these include parks, recreation grounds, markets, halls, cemeteries, libraries, mechanical plant, etc. The next table shows, for a three-year period, the total annual revenue receipts of all municipalities and cities:

Local Government Authorities
Revenue Fund Receipts, Ordinary Services and Business Undertakings,
Classified According to Source
(\$'000)

Source of Receipts	1966-67	1967-68	1968-69
Ordinary Services—			
Rates	8,584	9,638	10,495
Licences	129	147	171
Total	8,714	9,785	10,666
Public Works and Services—			
Health, Sanitary and Garbage Services ..	61	57	72
Council Properties	1,199	1,205	1,283
Private Street Construction	75	85	136
Private Works	318	285	296
Other	194	74	82
Total	1,847	1,705	1,869
Government Grants and Refunds—			
Roads	1,374	1,653	1,550
Other	267	203	278
Total	1,640	1,856	1,828
Other Receipts (a)	649	686	887
Total Ordinary Services	12,850	14,033	15,250
Business Undertakings—			
Water Supply—			
Rates	2,697	2,952	3,395
Government Grants (b)	r 1,228	r 1,125	1,256
Charges, Sales, etc.	470	517	542
Total	r 4,394	r 4,594	5,193
Sewerage—			
Rates	1,548	1,761	1,963
Government Grants	77	92	115
Charges, etc.	183	169	195
Total	1,808	2,022	2,273
Abattoirs—			
Charges, Sales, etc.	543	586	(c) 761
Total Business Undertakings	r 6,745	r 7,202	8,227
Grand Total.. .. .	r19,595	r21,235	23,478

(a) Includes contributions to sinking funds and interest earned by such funds, and net receipts of deposits and superannuation accounts.

(b) Grants received from the Metropolitan Water Board have been included in total and not off-set against working expenses.

(c) In 1968-69 Longford sold its abattoirs; proceeds from the sale are included.

Revenue Receipts Summary

In the preceding table, the dissection between ordinary services and business undertakings prevents totals emerging for rates and for government grants; details for these items, in total, are shown in the summary which follows:

**Revenue Fund Receipts, Ordinary Services and Business Undertakings
(\$'000)**

Year	All Rates (net)	Licences	Total Govt Grants and Refunds	Business Undertakings (a)	Ordinary Municipal Services (b)	Other Receipts	Total Receipts
1958-59 ..	5,962	30	788	714	1,014	328	8,836
1959-60 ..	6,622	58	950	870	918	364	9,782
1960-61 ..	7,286	60	1,240	842	1,068	372	10,868
1961-62 ..	8,084	66	1,690	924	1,064	270	12,098
1962-63 ..	8,710	68	2,410	926	1,338	312	13,764
1963-64 ..	9,411	77	2,443	1,016	1,346	499	14,792
1964-65 ..	10,380	87	(c)2,462	1,153	1,679	489	16,250
1965-66 ..	11,505	100	(d)2,308	1,106	1,832	544	17,395
1966-67 ..	12,829	129	r2,945	1,196	1,847	649	r19,595
1967-68 ..	14,351	147	r3,073	1,273	1,705	686	r21,235
1968-69 ..	15,854	171	3,199	1,498	1,869	887	23,478

(a) Excludes rates and grants which are shown separately.

(b) Includes receipts from council properties, e.g. sports grounds, halls, etc.

(c) From 1965-66, refunds excluded and allocated under next three headings.

(d) From 1966-67, Metropolitan Water Board grants included in total and not off-set against payments.

Revenue Payments by Local Government Authorities

The following table shows annual payments by local government authorities from ordinary revenue and from the revenue of business undertakings:

**Local Government Authorities
Revenue Fund Payments, Ordinary Services and Business Undertakings, Classified
According to Service
(\$'000)**

Payments for	1966-67	1967-68	1968-69
Ordinary Services—			
General Administration	1,606	1,509	2,000
Debt Services—Interest (a)	1,331	1,503	1,687
Redemption	1,226	1,258	1,438
Paid to Sinking Funds	152	160	169
Total	2,709	2,921	3,293
Public Works and Services—			
Roads, Streets, Bridges	4,429	5,144	5,131
Health	247	350	373
Sanitary and Garbage Services	493	576	511
Street Lighting	359	302	373
Parks, Recreation Grounds, etc.	976	1,075	1,397
Other Council Properties	973	1,071	822
Other Services	155	92	244
Total	7,632	8,610	8,851
Grants	368	405	568
Other Payments (b)	160	309	66
Total Ordinary Services	12,475	13,754	14,778

**Revenue Fund Payments, Ordinary Services and Business Undertakings,
Classified According to Service—continued**

(\$'000)

Payments for	1966-67	1967-68	1968-69
Business Undertakings—			
Water Supply—			
Working Expenses (c)	r 3,012	r 3,246	3,665
Interest	737	787	816
Redemption	554	544	606
Contribution to Sinking Funds ..	29	24	25
Total	r 4,331	r 4,603	5,113
Sewerage—			
Working Expenses	r 613	r 685	847
Interest	747	851	946
Redemption	385	408	452
Contribution to Sinking Funds ..	37	40	41
Total	1,782	1,985	2,286
Abattoirs—			
Working Expenses	408	438	434
Interest	39	45	48
Redemption	25	24	(d) 123
Contribution to Sinking Funds ..	8	8	9
Total	481	516	615
Total Business Undertakings ..	r 6,594	r 7,104	8,014
Grand Total—Payments	r19,069	r20,858	22,790

(a) Excludes interest on overdraft charged to General Administration.

(b) Excludes payments from deposit and superannuation accounts which are off-set against receipts.

(c) Grants received from the Metropolitan Water Board are included in revenue receipts and have not been off-set against working expenses.

(d) Longford municipality sold its abattoirs and redeemed its total abattoirs loan debt.

Principal items included as 'Council Properties' in the table are car parks, halls, markets, cemeteries and libraries. 'Roads, Streets, Bridges' includes road construction and maintenance, drainage, cleaning and watering, streets, private street construction, private works, plant purchase and net plant maintenance costs.

The Beaconsfield municipality is served by the West Tamar Water Supply Scheme, which the municipality maintains and manages as agent for the Rivers and Water Supply Commission. All debt in the municipality in respect of water supply became the responsibility of the Commission on 1 July 1960; interest and principal repayments to the Commission on loans raised for the purpose of this water have been included in 'Working Expenses' in the previous table.

The following municipalities operate abattoirs: Launceston, Burnie, Devonport and Campbell Town. Other abattoirs in Tasmania are commercially operated concerns.

Payments, Summary

Details of total interest and redemption payments appear below:

Payments, Ordinary Services and Business Undertakings
(£'000)

Year	Adminis- tration (a)	Loan Charges		Ordinary Services (b)		Business Undertak- ings (b)	Total
		Interest (a)	Redemp- tion	Roads, Streets, Bridges	Other		
1958-59 ..	782	922	888	2,658	2,154	1,432	8,836
1959-60 ..	885	1,095	1,000	2,914	2,168	1,700	9,762
1960-61 ..	882	1,247	1,137	3,350	2,396	1,910	10,924
1961-62 ..	921	1,471	1,255	3,620	2,404	2,106	11,778
1962-63 ..	992	1,853	1,421	3,990	2,948	2,053	13,256
1963-64 ..	1,190	2,019	1,631	4,160	3,236	2,419	14,654
1964-65 ..	1,383	2,164	1,897	4,027	3,741	2,697	(c) 16,176
1965-66 ..	1,614	2,402	2,011	4,375	3,339	3,082	(c) 17,085
1966-67 ..	1,606	2,856	2,192	4,429	3,730	<u>4,030</u>	(c) <u>19,069</u>
1967-68 ..	1,509	3,186	2,234	5,144	4,180	<u>4,371</u>	(c) <u>20,858</u>
1968-69 ..	2,000	3,497	2,619	5,131	4,354	4,947	(c) 22,790

(a) Interest on overdraft has been charged to Administration.

(b) Excluding interest and redemption shown separately. From 1966-67 grants received from the Metropolitan Water Board have been included in revenue receipts and not off-set against working expenses.

(c) Includes contributions to sinking fund not specified in the table: 1964-65, \$263,000; 1965-66, \$261,000; 1966-67, \$225,000; 1967-68, \$233,000; 1968-69, \$243,000. In earlier years similar contributions were eliminated from the analysis as contra items.

Loan Receipts

At 30 June 1969 the aggregate loan debt of all local government authorities was \$67,839,000, of which only \$916,700 (i.e. 1.4 per cent) was in respect of debt due to the State Government. The principal Tasmanian sources of loans for local government authorities are banks, superannuation and various trust funds, insurance companies, and for cities, public issues. The amount that any local government authority can raise is governed by: (i) the difficulty in finding willing lenders; (ii) the fact that the approval of the State Treasury is required; and (iii) under the *Local Government Act* 1962, total loan indebtedness is strictly controlled and cannot exceed a predetermined figure based on annual income for the preceding three years.

The following table shows, for a three-year period, the receipts of the loan accounts of all local government authorities:

Local Government Authorities: Receipts to Loan Account
(£'000)

Particulars	1966-67	1967-68	1968-69
Loan Raisings for—			
Ordinary Services	3,602	4,182	4,289
Water	1,255	1,174	674
Sewerage	2,114	2,801	2,671
Abattoirs	10	(a)	(a)
Total Raisings	6,981	8,157	7,633
Government Capital Grants	455	1,157	710
Offsets to Loan Expenditure (b)	244	289	345
Total Receipts	7,680	9,604	8,689

(a) Included in 'Ordinary Services'.

(b) Sales of capital assets, sales of surplus materials, etc.

Loan Payments and Loan Debt

The next table shows, for a three-year period, details of payments from the loan accounts of all local government authorities; also the loan debt at the end of the period (in the matter of debt, Launceston City can report only three components: water; sewerage; and other):

**Local Government Authorities: Annual Loan Payments and
Loan Debt Classified According to Purpose**
(\$'000)

Purpose	Loan Payments			Loan Debt at 30 June 1969
	1966-67	1967-68	1968-69	
Water	1,595	2,184	1,225	14,897
Sewerage	2,529	2,747	2,601	19,613
Drainage	242	333	364	1,729
Roads, Bridges, Streets, Footpaths	1,979	1,982	2,048	12,441
Plant Machinery, etc.	190	122	240	966
Council Property, including Halls	813	1,147	1,396	5,783
Recreation, including Parks and Gardens	586	555	511	4,858
Other	155	293	232	(a) 7,553
Total	8,091	9,364	8,616	67,839

(a) Includes \$4.92m part of the debt of Launceston City, which is not allocated to purpose; the balance of the Launceston City debt is included in the water and sewerage totals above but not allocated to other items.

Loan Summary

The following table shows, in summary form, loan raisings, loan debt and sinking funds:

Local Government Authorities: Loan Raisings, Loan Debt and Sinking Funds
(\$'000)

Year	Loan Raisings During Financial Year			Loan Debt at 30 June			Total of Sinking Funds at 30 June (c)
	From State Govern- ment (a)	From Other Sources (b)	Total	To State Govern- ment	To Other Creditors	Total	
1958-59 ..	43	3,642	3,685	144	22,835	22,979	388
1959-60 ..	138	5,094	5,232	268	26,876	27,144	422
1960-61 ..	269	5,010	5,279	524	29,906	30,429	473
1961-62 ..	301	5,863	6,164	808	34,543	35,351	561
1962-63 ..	116	5,209	5,325	853	38,173	39,026	662
1963-64 ..	165	5,681	5,846	990	42,279	43,269	817
1964-65 ..	9	6,228	6,237	932	46,665	47,597	849
1965-66 ..	82	6,430	6,512	977	51,119	52,096	991
1966-67 ..	21	6,960	6,981	907	55,980	56,888	1,206
1967-68 ..	79	8,104	8,183	917	61,903	62,821	1,496
1968-69 ..	35	7,599	7,633	917	66,922	67,839	1,706

(a) These advances were from the State Treasury direct, and exclude those from authorities such as the Housing Department and the Metropolitan Transport Trust.

(b) Includes advances from the Housing Department and the Metropolitan Transport Trust.

(c) Sinking funds maintained by municipalities and cities for debt redemption purposes.

Source of Loan Funds

It can be seen from the preceding table that the local government loan debt includes only a small liability in respect of advances made by the State Treasury. The proportion of total debt now owed to State authorities (but not directly to the Treasury) has increased somewhat, principally due to co-operation between individual municipalities and the State Housing Department. In planning the establishment of large housing estates, the Housing Department has been concerned with the provision of certain essential services (e.g. water and sewerage); where such services have required capital expenditure by a municipality, the Department has made some loan funds available.

Instalment Debentures

Much of the debt of the municipalities is in the form of instalment debentures which involve equal periodic payments (usually yearly or half-yearly); such payments are credited to redemption and interest in changing proportions, the accounting being the same as used to record home instalment purchase transactions.

Financial Statistics of Individual Local Government Authorities

In this chapter, local government finance statistics have been presented in total only; similar details for individual authorities are shown annually in the Tasmanian Office's bulletin, *Finance*. The following table shows, for each municipality and city: (i) rates received; (ii) payments from loan and revenue accounts; (iii) balance of funds; (iv) loan debt.

Individual Municipalities and Cities: Financial Summary, 1968-69
(£'000)

Municipality or City	Total Rates Received (Net)	Payments		Funds at 30-6-69 (a)	Loan Debt at 30-6-69
		Loan Accounts	Revenue Accounts		
Beaconsfield	(b) 342.7	319.2	438.9	32.8	1,229.3
Bothwell	39.7	2.0	99.1	-7.8	32.1
Brighton	55.4	48.2	100.0	55.0	124.6
Bruny	14.4	2.3	38.0	10.3	11.2
Burnie	960.6	596.8	1,083.9	666.7	4,095.6
Campbell Town	80.4	15.6	128.3	40.1	273.9
Circular Head	252.3	76.6	315.5	140.3	431.7
Clarence	1,244.5	816.5	1,895.2	177.8	5,993.2
Deloraine	123.5	48.2	193.6	64.6	278.2
Devonport	759.1	719.6	1,056.7	11.5	4,567.4
Esperance	103.8	52.0	148.0	19.9	444.5
Evandale	56.5	21.9	96.2	36.2	124.7
Fingal	82.4	..	136.6	16.9	279.4
Flinders	58.1	62.1	130.6	62.5	170.5
George Town	240.0	94.1	310.6	81.1	1,035.8
Glamorgan	61.7	31.6	75.6	7.1	272.1
Glenorchy (City)	1,652.7	882.9	2,213.3	156.5	7,380.3
Gormanston	15.7	..	19.7	5.6	0.9
Green Ponds	28.4	13.0	51.4	6.4	47.3
Hamilton	59.5	0.4	121.6	7.8	107.4

(a) Value of bank balances (less unrepresented cheques), securities and cash on hand. A minus sign (—) indicates a debit balance.

(b) Includes water rates of \$110,500 collected by the Beaconsfield Council on behalf of the Rivers and Water Supply Commission.

Individual Municipalities and Cities: Financial Summary, 1968-69—continued

(\$'000)

Municipality or City	Total Rates Received (Net)	Payments		Funds at 30-6-69 (a)	Loan Debt at 30-6-69
		Loan Accounts	Revenue Accounts		
Hobart (City)	3,470.0	1,729.0	4,579.1	2,452.4	15,091.3
Huon	111.7	34.8	227.0	42.2	438.0
Kentish	113.6	103.0	183.9	80.0	404.7
Kingborough	374.6	353.0	584.3	184.1	2,006.1
King Island	92.6	25.8	143.3	55.2	333.0
Latrobe	164.0	98.2	248.4	52.2	727.8
Launceston (City)	2,185.7	685.6	3,362.3	1,923.4	8,304.5
Lilydale	207.9	84.0	251.0	116.6	845.7
Longford	158.4	158.1	351.5	74.2	983.0
New Norfolk	237.1	96.3	332.2	164.1	793.5
Oatlands	94.7	..	141.6	52.1	179.9
Penguin	126.1	57.6	161.4	60.0	490.5
Port Cygnet	71.0	3.0	155.9	8.7	226.5
Portland	56.2	29.0	114.7	20.6	236.9
Queenstown	129.5	15.0	137.7	55.1	126.5
Richmond	54.6	16.4	133.7	11.3	186.5
Ringarooma	73.7	3.1	137.0	26.3	103.5
Ross	29.2	..	62.0	15.8	20.8
St Leonards	556.7	185.5	695.6	101.2	2,776.5
Scottsdale	107.1	80.6	193.8	110.4	488.3
Sorell	129.2	256.6	284.6	111.6	743.8
Spring Bay	44.2	16.7	69.3	10.8	98.6
Strahan	11.0	34.4	67.9	-7.2	129.7
Tasman	19.6	18.8	62.9	-3.4	22.9
Ulverstone	350.6	215.7	518.9	121.0	2,583.8
Waratah	31.3	19.2	41.0	35.1	47.5
Westbury	145.8	50.2	263.6	9.7	384.7
Wynyard	376.6	347.1	460.4	170.3	1,664.0
Zeehan	99.4	96.2	170.7	52.6	500.1
Total	15,853.9	8,615.9	22,789.6	7,697.5	67,839.0

(a) Value of bank balances (less unrepresented cheques), securities and cash on hand. A minus sign (—) indicates a debit balance.

(b) Includes water rates of \$110,500 collected by the Beaconsfield Council on behalf of the Rivers and Water Supply Commission.

It will be seen from the previous table that the local government authorities collecting the greatest sums in rates were: Hobart (\$3.47m); Launceston (\$2.19m); Glenorchy (\$1.65m); and Clarence (\$1.24m). The local government authorities with the greatest loan debts were: Hobart (\$15.09m); Launceston (\$8.30m); Glenorchy (\$7.38m); and Clarence (\$5.99m). The authorities collecting the smallest sums in rates were: Strahan (\$11,000); Bruny (\$14,400); Gormanston (\$15,700); Tasman (\$19,600). The very wide range in the capacity of the 49 local government authorities to raise revenue, using boundaries which in many cases date back to 1906, was one of the factors advanced by the Municipal Commission when it made its 1965 report recommending the creation of 18 municipalities and two cities; amalgamation of existing authorities into larger units was seen as a method of solving this problem.

Employees of Local Government Authorities

The following table shows employees of local government authorities at 30 June 1969; the twelve authorities specified in descending order are those employing 40 or more. The range of employees of individual authorities extends from around 500 persons in Hobart and Launceston cities to as low as two persons in some of the minor municipalities. The number of employees is not a complete guide to the level of activity since much work is carried out by private contractors in some areas:

**Local Government Authorities: Persons Employed by Main Authorities
at 30 June 1969 (a)**

Local Government Authority	General Administration		All Other Services		Total		
	Males	Females	Males	Females	Males	Females	Persons
Launceston (City) ..	85	34	334	24	419	58	477
Hobart (City) ..	133	31	319	14	452	45	497
Glenorchy (City) ..	48	19	123	3	171	22	193
Devonport ..	28	7	139	8	167	15	182
Clarence ..	40	13	124	20	164	33	197
Burnie ..	26	9	109	5	135	14	149
Kingborough ..	18	10	40	1	58	11	69
St Leonards ..	11	10	56	..	67	10	77
Ulverstone ..	9	6	44	2	53	8	61
Wynyard ..	7	4	43	3	50	7	57
New Norfolk ..	6	2	39	2	45	4	49
Beaconsfield ..	5	5	28	4	33	9	42
Other Municipalities ..	87	53	415	50	502	103	605
Total ..	503	203	1,813	136	2,316	339	2,655

(a) Includes permanent and temporary employees but excludes part-time employees.

The next table shows total employees of local government authorities over a five-year period:

Local Government Authorities: Persons Employed (a) at 30 June

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
General Administration—					
Males	386	451	485	486	503
Females	169	177	195	192	203
Persons	555	628	680	678	706
All Other Services—					
Males	1,691	1,749	1,777	1,824	1,813
Females	60	45	43	59	136
Persons	1,751	1,794	1,820	1,883	1,949
Total—					
Males	2,077	2,200	2,262	2,310	2,316
Females	229	222	238	251	339
Persons	2,306	2,422	2,500	2,561	2,655

(a) Includes permanent and temporary employees but excludes part-time employees.

WATER SUPPLY AND SEWERAGE

Introduction

Water supply and sewerage were once exclusively the responsibility of the cities and municipalities; two semi-government authorities now operate bulk supply schemes, piping water for distribution by the local government authorities in the Hobart and Launceston areas, and directly to certain industrial consumers.

Metropolitan Water Board

The overall control of water supply in Hobart, Clarence, Glenorchy and Kingborough is vested in the Metropolitan Water Board, but the four local government authorities retain primary responsibility for reticulation and sale to consumers. The Board has constructed a large pumping station at Bryn Estyn on the Derwent, pipeline capacity being 20m gallons per day. Before the Board came into operation in 1962, the four metropolitan local government authorities had their own supply schemes (e.g. Hobart supplied from Lake Fenton and Mount Wellington); these schemes still operate but the Board's pumping works based on the Derwent now give an assured supply. The eventual limiting factor will not be a shortage of water but simply the need to increase pumping and pipeline facilities.

The Board also controls the Southern Regional Water Supply Scheme drawing water from the Derwent, and originally constructed to supply Hobart's eastern shore suburbs (reticulation is still the responsibility of the local government authorities). On the eastern shore, the Board has now extended its service to the towns of Cambridge, Midway Point, Sorell, Seven Mile Beach, Lauderdale and Rokeby, whilst western shore extensions serve Margate, Snug and Howden. During 1968-69 the Kingborough extension was completed; total cost, including two 0.5m gallon reservoirs, was \$0.64m. Investigation into further possible dam sites to serve the Kingborough area is continuing.

Under the *Metropolitan Water Board Act* 1961, the four metropolitan local government authorities no longer borrow money for water works, the Board now providing them with the necessary capital in the form of grants; the local authorities in turn are required to make revenue contributions to the Board. At 30 June 1969, the loan debt of the Board to the State Treasury was \$14.99m and, to other lenders, \$3.12m.

Financial Relationship

The relations between the Board and the four metropolitan local government authorities are summarised in the following table:

Metropolitan Water Board—Income and Expenditure
(\$'000)

Particulars	1966-67	1967-68	1968-69
INCOME			
Municipal Contributions—			
Hobart	457	536	710
Glenorchy	359	393	496
Clarence	416	448	555
Kingborough	69	76	94
Special Consumers	225	221	256
Direct Earnings, Southern Regional Scheme ..	158	173	194
Other Revenue	8	8	12
Total	1,693	1,855	2,316

Metropolitan Water Board—Income and Expenditure—continued
(\$'000)

Particulars	1966-67	1967-68	1968-69
EXPENDITURE			
Reimbursement of Working Expenses—			
Hobart	317	314	313
Glenorchy	221	216	217
Clarence	119	130	133
Kingborough	36	37	38
Bulk Supply, Operation Costs	263	r 268	328
Administrative Expenses	31	r 34	52
Interest	593	r 666	800
Depreciation	160	186	220
Total	1,738	r1,850	2,101

Capital Expenditure

In 1968-69, the Board's capital expenditure was \$1,492,000, the chief items being: (i) \$518,000 on Risdon Brook Dam; (ii) \$64,000 on the Kingborough extension; (iii) \$760,000 advanced to the four local government authorities for construction of approved works and for the redemption and conversion of their water loans.

Water Meters

In 1969, Parliament approved the installation of water meters in the Hobart metropolitan water districts. The Metropolitan Water Board expects to complete the installation of the meters by 30 June 1972.

In evidence before a Legislative Council Select Committee investigating the matter, the Board stated that only one other capital city, Brisbane, was substantially unmetered. Hobart had the highest annual per capita water consumption of all state capitals. Experience elsewhere indicated that the introduction of meters for domestic consumers had resulted in reductions of up to 25 per cent in daily water consumption.

With the increasing demand on existing resources and in order to ensure adequate supplies for the summer of 1971-72, expenditure of \$1.37m will need to be undertaken to increase the capacity of the Derwent Water Supply from 20m to 30m gallons per day. The Water Board estimated that this supply would suffice until 1978-79 when a new pipe-line and ancillary works would be required to boost capacity to 40m gallons per day; the estimated cost, at current prices, of such a scheme, would be \$12.25m.

The Board then stated that the installation of water meters would reduce consumption and therefore permit the deferment of expenditure on the 40m gallons per day scheme for up to nine years. Total cost of meter installation (\$800,000) would be offset by the savings on pumping and treatment costs which would result from the reduction in water consumption.

Municipal Waterworks and Sewerage Schemes

The following table gives details of the number of properties served by municipal water and sewerage schemes, the receipts from and the payments made for these schemes:

**Municipal Water and Sewerage Schemes (a): Properties Served,
Receipts and Payments 1968-69**

Municipality	Water Supply				Sewerage			
	Properties Served (No.)	Revenue Receipts (\$'000)	Revenue Payments (\$'000)	Loan Fund Payments (\$'000)	Properties Served (No.)	Revenue Receipts (\$'000)	Revenue Payments (\$'000)	Loan Fund Payments (\$'000)
Beaconsfield (b)	4,467	146	145	..	1,968	43	50	214
Bothwell ..	235	4	7	2	..	..	..	..
Brighton ..	340	13	14	..	..	..	..	..
Burnie ..	5,480	209	208	23	4,800	145	132	194
Campbell Town	541	9	9	..	353	16	17	10
Circular Head	1,637	49	49	9	214	5	7	12
Clarence ..	9,982	754	753	87	6,659	243	260	231
Deloraine ..	927	29	25	5	..	..	..	..
Devonport ..	6,000	274	232	125	5,000	108	108	146
Esperance ..	1,017	29	26	11	241	13	16	16
Evandale ..	325	13	14	16	..	..	..	..
Fingal ..	1,090	34	39	..	..	..	..	..
Flinders ..	100	2	2	57	..	..	..	..
George Town	1,445	67	66	..	1,247	41	41	26
Glamorgan ..	702	24	24	..	..	..	..	15
Glenorchy ..	14,500	812	810	119	9,819	383	378	377
Gormanston..	270	2	2	..	..	..	..	..
Green Ponds	134	6	6	..	..	..	..	..
Hamilton ..	180	9	10	..	..	..	..	..
Hobart ..	16,400	1,041	1,038	299	15,300	260	261	96
Huon ..	2,298	25	27	15	260	14	17	9
Kentish ..	724	28	27	26	308	11	6	57
Kingborough	3,486	171	166	53	1,660	63	73	141
King Island ..	322	15	15	..	207	9	12	2
Latrobe ..	1,822	30	32	8	821	39	42	10
Launceston ..	14,692	488	485	124	15,068	416	382	133
Lilydale ..	2,031	68	63	41	1,789	41	45	10
Longford ..	1,100	31	32	7	400	25	30	97
New Norfolk	1,955	49	48	3	1,706	30	32	41
Oatlands ..	391	17	19	..	..	..	..	..
Penguin ..	960	30	29	5	597	13	13	15
Port Cygnet	408	15	16	..	240	4	4	..
Portland ..	653	19	24	23	259	4	..	..
Queenstown..	1,610	16	18	..	1,466	11	8	..
Richmond ..	349	16	16	5	..	..	..	..
Ringarooma	695	17	16	..	..	..	..	..
Ross ..	167	4	5	..	..	..	..	..
St Leonards ..	4,669	224	221	22	3,940	148	142	51
Scottsdale ..	1,572	50	43	3	..	..	..	73
Sorell ..	1,000	91	92	2	..	6	12	240
Spring Bay ..	455	15	15	2	..	..	..	..
Strahan ..	480	14	14	34	..	..	..	..
Ulverstone ..	3,043	103	94	72	2,432	92	98	66
Westbury ..	974	39	28	16	289	9	10	18
Wynyard ..	1,886	77	70	13	1,664	59	67	222
Zeehan ..	927	18	20	..	505	20	22	80
Total ..	114,441	5,193	5,113	1,225	79,212	2,273	2,286	2,601

(a) The municipalities of Tasman, Bruny and Waratah did not operate water or sewerage schemes during 1968-69.

(b) Beaconsfield municipality is served by the West Tamar Water Scheme; all debt and payments in the municipality in respect of water supply became the responsibility of the Rivers and Water Supply Commission on 1 July 1960. The scheme is maintained and managed by the municipality as agent for the Commission, which also determines the receipts to be collected by the municipality and re-imburses all payments.

At 30 June 1969, the capacity of reservoirs in Tasmania was approximately 3,936m gallons, supplying approximately 114,000 properties which consumed almost 16,000m gallons during the year. In 1968-69, the receipts of all local government authorities for water supply totalled \$5.19m, their loan debt for construction purposes at 30 June 1969 standing at \$14.90m. (See previous section, 'Metropolitan Water Board', for new arrangement reducing debt of metropolitan local government authorities.)

At 30 June 1969, sewerage services were connected to approximately 79,000 tenements of which about 50 per cent were connected to sewerage treatment plants. In 1968-69, the receipts of all local government authorities for sewerage services were \$2.27m, their loan debt for construction standing at \$19.61m.

Rivers and Water Supply Commission

Regional Schemes

The Commission operates two regional schemes: (i) the North Esk Regional Water Supply, serving portion of the municipalities of Evandale, George Town, Lilydale, St Leonards and Westbury, and industrial users at Bell Bay; (ii) the West Tamar Water Supply, serving the west shore of the Tamar located in the Beaconsfield Municipality. The local government authorities retain primary responsibility for reticulation and sale to consumers, except to certain industrial users. At 30 June 1969, the loan debt of the Commission to the State Treasury in respect of these two schemes was \$4.04m and, to other lenders, \$1.17m.

Prosser River Scheme

A smaller Commission scheme operates on the Prosser River, supplying water to the sodium alginate industry at Louisville near Orford and supplementing the water supply for the town of Orford in the Spring Bay Municipality; loan debt to the State Treasury in respect of this scheme was \$0.40m at 30 June 1969.

Longford-Cressy Irrigation Scheme

During 1970, the State Rivers and Water Supply Commission commenced work on the Longford-Cressy Irrigation Scheme. Water from the tailrace of the Hydro-Electric Commission's Poatina works will be utilised to irrigate about 7,000 acres of land, within an area of 20,000 acres proclaimed by the Governor as an irrigation district in May 1970. The Commonwealth Government has offered \$750,000 towards the cost of the scheme which will involve the construction of some sixty miles of channels.

The main channel will extend for seven miles from the Poatina tailrace to Western Lagoon the southern boundary of the irrigation district. The West Channel will then proceed through to the Liffey River, the East Channel through to Longford while the North Channel will branch from the West Channel, north of Bracknell, towards Hadspen.

Where required, the channels will be fenced and the fences maintained at the Commission's expense. Land-owners will be entitled to receive compensation for channel easements acquired by the Commission: in assessing such compensation, the Land Valuation Branch will take into account such factors as value of land, severance of paddocks and the enhancement of property values as a result of the scheme.

Other Areas

The Commission is currently investigating the feasibility of establishing similar storage schemes for the valleys of the Coal, Jordan, Meander and Huon Rivers.

Subsidies

In addition, the Commission recommends to the Minister the payment of subsidies if construction of water and sewerage schemes is beyond the financial capacity of local government authorities, or if they require assistance to pay for water supplied from regional schemes. In 1968-69, Government subsidies in respect of local government water, sewerage and drainage schemes were \$499,095 (excluding a subsidy of \$87,000 to the West Tamar scheme).

Chapter 5

DEMOGRAPHY

POPULATION

Introduction

Inclusion of Aborigines in Population Statistics

In this Chapter, Aborigines are not included in any of the tables for periods prior to 1961 nor are they included in any of the detailed census classifications for 1961 and 1966. In tables showing only the total population for the State (and for Local Government Areas), they have been included, however, from 1961. This change was brought about by the repeal of Section 127 of the Commonwealth Constitution but, for all practical purposes, it has had no effect on Tasmanian population figures as only one Aboriginal was recorded in Tasmania at the 1966 Census.

Historical

In 1803, Lieutenant John Bowen's expedition of 49 persons made the first white settlement at Risdon Cove; at 30 June 1969, Tasmania's population was estimated to be 388,464 persons.

The Statistical Tables, Tasmania 1804 to 1823 show the first population record in 1816 when the white inhabitants numbered 1,461, analysed as 1,032 free settlers, 409 convicts and 20 children of convicts. From the year 1816, there exists a continuous annual record of Tasmania's population.

Source of Population Figures

There are two principal methods by which population figures are obtained: (i) by census enumeration; (ii) intercensal estimates based on the application of vital and migration statistics to census data. The second method involves taking account of natural increase (excess of births over deaths), and net migration (excess of arrivals over departures) and applying these net figures to information obtained from an earlier census, the result being termed an intercensal estimate. (*Net migration* may be ascertained by two methods: taking account of *all* arrivals and departures, or only of arrivals and departures related to permanent change of place of residence. The former method was used for all estimates up to 30 June 1961, the latter method for later series. In relation to this change, see later section headed 'New Method of Estimating Population'.)

Censuses were conducted by the State in 1841, 1847, 1851, 1857, 1861, 1870, 1881, 1891 and 1901; the Commonwealth Statistician became responsible for censuses with the establishment of the Commonwealth Bureau of Census and Statistics and conducted them in 1911, 1921, 1933, 1947, 1954, 1961 and 1966. The next population census is scheduled for June of this year.

Population from 1820

The table that follows is based on the traditional historical series and has been compiled to show the population at the end of each decade from 1820, the average annual growth in total population for each decade and the contribution made by natural increase.

Historical Summary of Tasmanian Population in Decades

Year	Estimated Population (a)			Average Annual Increase For Decade (b)	
	Males	Females	Persons	In Total Population	From Natural Increase (c)
1820 (d)	4,057	1,343	5,400	..	..
1830 (d)	18,108	6,171	24,279	1,888	..
1840 (d)	32,040	13,959	45,999	2,172	106
1850	44,229	24,641	68,870	2,287	656
1860	49,653	40,168	89,821	2,095	1,214
1870	53,517	47,369	100,886	1,107	1,622
1880	60,568	54,222	114,790	1,390	1,542
1890	76,453	68,334	144,787	3,000	2,496
1900	89,763	83,137	172,900	2,811	2,776
1910	97,026	92,781	189,807	1,691	3,322
1920	106,236	103,189	209,425	1,962	3,649
1930	111,148	108,835	219,983	1,056	3,127
1940	121,911	118,280	240,191	2,021	2,438
1950	140,339	135,563	275,902	3,571	3,768
1960	174,379	169,531	343,910	6,801	5,523
1969 (e)	196,041	192,423	388,464	4,950	5,137

(a) Up to 1900, at 31 December; from 1910, at 30 June.

(b) Decade ending in year shown.

(c) Excess of births over deaths in calendar years.

(d) Imperial military establishment of about 1,000 troops included; excluded after 1842.

(e) Incomplete decade; averages based on nine-year period only.

Pattern of Net Migration

From the first settlement until 1850, the rapid growth in population was partly due to the British Government's convict transportation policy. After the cessation of transportation in 1853, the immigration rate slowed and natural increase became the more important component of population growth.

By comparing the last two columns in the previous table, it is possible to make an assumption as to whether net migration (excess of arrivals over departures) tended to be positive or negative in any decade.

In the two decades ended 1870 and 1880, for example, natural increase was becoming a more significant factor but the growth of population was checked by negative net migration. Important mining discoveries (e.g. Mt Bischoff, Zeehan and Mt Lyell) brought prosperity to the State, and the two decades ended 1890 and 1900 were characterised by positive net migration.

The main characteristic of the five decades up to 1950 was a persistent loss of population due to negative net migration, the decade most affected ending in 1930. This trend of net migration loss persisted till the end of World War II (1945). The Commonwealth Government's post-war immigration policy and the increasing industrialisation of the State combined to reverse the adverse trend of the previous half-century, and the last decade, ending 1960, was characterised by positive net migration. In the present incomplete decade, some loss of population by negative net migration is suggested by the figures. In total there has been an increase of 44,554 persons over a period of nine years, or an average of 4,950 persons each year. The actual annual increase in population since 1961 has been as follows:

Actual Annual Increase in Population from 1961

Year (a)	Persons	Year (a)	Persons
1961	6,430	1966.. ..	3,531
1962	5,328	1967.. ..	4,998
1963	5,029	1968.. ..	5,596
1964	3,584	1969.. ..	6,434
1965	3,594		

(a) Year ended 30 June.

Census Populations from 1841

The following table records the population and masculinity at each census since 1841 and compares the rate of intercensal growth.

Population and Masculinity at each Census from 1841

Census Date (a)	Population			Average Annual Percentage Rate of Increase (b)	Masculinity (c)
	Males	Females	Persons		
27 Sept. 1841 ..	34,504	15,712	50,216	..	219.60
31 Dec. 1847 ..	47,828	22,336	70,164	5.29	214.13
1 Mar. 1851 ..	44,648	25,482	70,130	-0.01	175.21
31 Mar. 1857 ..	46,606	34,886	81,492	2.53	133.60
7 Apr. 1861 ..	49,593	40,384	89,977	2.51	122.80
7 Feb. 1870 ..	52,853	46,475	99,328	1.11	113.72
3 Apr. 1881 ..	61,162	54,543	115,705	1.40	112.14
5 Apr. 1891 ..	77,560	69,107	146,667	2.40	112.23
31 Mar. 1901 ..	89,624	82,851	172,475	1.64	108.17
3 Apr. 1911 ..	97,591	93,620	191,211	1.04	104.24
4 Apr. 1921 ..	107,743	106,037	213,780	1.12	101.61
30 June 1933 ..	115,097	112,502	227,599	0.52	102.31
30 June 1947 ..	129,244	127,834	257,078	0.87	101.10
30 June 1954 ..	157,129	151,623	308,752	2.65	103.63
30 June 1961 ..	177,628	172,712	350,340	1.82	102.85
30 June 1966 ..	187,391	184,045	371,436	1.18	101.82

(a) Imperial military establishment included until 1870, when British troops were withdrawn.

(b) Intercensal increase in total population as compound rate of growth per cent.

(c) Number of males per 100 females.

Population growth varied widely during the nineteenth century. From 1841 to 1847 the annual population increase averaged 5.29 per cent, largely due to the transportation system. Following self-government, the colony entered a period of depression and the growth rate fell until the development of mining at the end of the century. A steady increase has been maintained throughout the twentieth century except for a slowing in the period of the 1930s and an immediate post-war acceleration due to an influx of European migrants.

Comparison with other States

The following table compares the Tasmanian population at Censuses from 1901 with that of other States and Territories (full-blood Aborigines are excluded).

Australia: Census Populations of States and Territories (a)
(⁰⁰⁰ Persons)

State or Territory	1901	1921	1933	1947	1954	1961	1966
N.S.W.	1,355	2,100	2,601	2,985	3,424	3,917	4,234
Victoria	1,201	1,531	1,820	2,055	2,452	2,930	3,220
Queensland	498	756	947	1,106	1,318	1,519	1,664
S.A.	359	495	581	646	797	969	1,092
W.A.	184	333	439	502	640	737	837
Tasmania	172	214	228	257	309	350	371
N.T.	5	4	5	11	17	27	37
A.C.T. (b) . . . .	..	3	9	17	30	59	96
Australia	3,774	5,436	6,630	7,579	8,987	10,508	11,550

(a) Census of 1911 not shown.

(b) Part of N.S.W. prior to 1911.

The next table shows the average annual rate of increase of population in each State and Territory during intercensal periods.

Australia: Average Annual Percentage Rate of Increase of Population
During Intercensal Periods

State or Territory	1911-21	1921-33	1933-47	1947-54	1954-61	1961-66
N.S.W.	2.46	1.76	0.99	1.98	1.94	1.57
Victoria	1.53	1.42	0.87	2.56	2.58	1.90
Queensland	2.24	1.86	1.11	2.53	2.04	1.84
S.A.	1.94	1.31	0.76	3.05	2.83	2.41
W.A.	1.66	2.29	0.97	3.51	2.03	2.58
Tasmania	1.12	0.52	0.87	2.65	1.82	1.18
N.T.	1.57	1.87	5.93	6.12	7.40	6.58
A.C.T.	4.14	10.71	4.65	8.70	9.93	10.30
Australia	2.01	1.63	0.96	2.46	2.26	1.91

Intercensal Adjustment

Earlier, mention was made of the method for calculating intercensal estimates of population by taking account of recorded natural increase and recorded net migration. The following two tables show these factors in successive intercensal periods from 1911; 'arrivals' and 'departures' in the first table refer to both short-term and long-term movements.

Analysis of Intercensal Increase in Population
(i) Recorded Natural Increase and Recorded Net Migration

Intercensal Period	Births	Deaths	Natural Increase	Arrivals	Departures	Net Migration
3.4.1911 to 4.4.1921 (a) ..	56,459	20,011	36,448	386,377	396,642	-10,265
4.4.1921 to 30.6.1933 (b) ..	61,955	25,174	36,781	507,209	535,780	-28,571
30.6.1933 to 30.6.1947 ..	73,130	34,767	38,363	482,577	493,305	-10,728
30.6.1947 to 30.6.1954 ..	51,615	17,557	34,058	870,768	845,009	+25,759
30.6.1954 to 30.6.1961 ..	59,282	18,631	40,651	1,070,297	1,065,254	+5,043
30.6.1961 to 30.6.1966 ..	41,276	14,786	26,490	1,071,892	1,077,942	-6,050

(a) Numbers recorded between the March quarters of 1911 and 1921, i.e. the quarter nearest to the census date.

(b) Numbers recorded from the March quarter of 1921.

(ii) Census Population, Intercensal Records and Intercensal Adjustment

Census Date	Population	Numbers Recorded Since Previous Census		Intercensal Adjustment (a)
		Natural Increase	Net Migration	
4.4.1921 ..	213,780	36,448	— 10,265	— 3,614
30.6.1933 ..	227,599	36,781	— 28,571	+ 5,609
30.6.1947 ..	257,078	38,363	— 10,728	+ 1,844
30.6.1954 ..	308,752	34,058	+ 25,759	— 8,143
30.6.1961 ..	350,340	40,651	+ 5,043	— 4,106
30.6.1966 ..	371,436	26,490	— 6,050	+ 656

(a) For definition, see following section; adjustment is to reconcile increase deduced from first column with net increase recorded in second and third columns.

In general, two population estimates are made for any specific date: (i) *original* estimates for dates subsequent to a census and made before another census is taken; (ii) *revised* estimates for each newly-completed intercensal period to adjust for the difference between the new census result and the comparable estimate. Thus, all original estimates of population for the intercensal periods from 1911 to 1966 have been revised to reconcile with the results of successive censuses from 1921 to 1966 and can be regarded as final. Estimates of population for dates after 30 June 1966 must be regarded as subject to revision, and will be revised after the 1971 Census.

Population Estimates, Intercensal Years

The following are estimates of State population as at 30 June and 31 December for successive years since 1954:

Estimated Population, 30 June and 31 December

Year	At 30 June			At 31 December		
	Males	Females	Persons	Males	Females	Persons
1954 (a) ..	157,129	151,623	308,752	162,393	156,825	319,218
1955 ..	159,861	154,231	314,092	165,356	159,563	324,919
1956 ..	162,196	156,274	318,470	168,695	162,645	331,340
1957 ..	165,940	160,190	326,130	172,186	166,621	338,807
1958 ..	169,123	163,943	333,066	174,465	169,433	343,898
1959 ..	172,097	167,279	339,376	178,109	173,240	351,349
1960 (b) ..	174,379	169,531	343,910	180,511	175,458	355,969
1961 (a) (b) ..	177,628	172,712	350,340	178,864	174,394	353,258
1962 ..	179,966	175,702	355,668	181,085	177,002	358,087
1963 ..	182,439	178,288	360,727	183,330	179,469	362,799
1964 ..	184,074	180,237	364,311	185,051	181,457	366,508
1965 ..	185,789	182,116	367,905	186,483	183,125	369,608
1966 (a) ..	187,391	184,045	371,436	188,539	185,366	373,905
1967 ..	189,912	186,522	376,434	191,446	188,182	379,628
1968 ..	192,724	189,306	382,030	194,666	191,365	386,031
1969 ..	196,041	192,423	388,464	197,289	193,862	391,151

(a) Figures at 30 June as recorded at Census.

(b) Break in series; see following paragraphs.

'De Facto' and 'De Jure'

Australian censuses allot persons to the State where they happen to be at the census date (*de facto* basis) and not to the State where they normally reside (*de jure* basis); net migration, as defined and measured prior to 1961, was also on a *de facto* basis. Thus the December estimates in the table for dates prior to 1961 are consistently higher than those for the preceding June by anything from 10,000 to 15,000 persons, due to the seasonal tourist influx.

New Method of Estimating Population

Until the Census of 1966, the quarterly intercensal population of each State had been estimated using three components: (i) the previous census population; (ii) accumulated natural increase; (iii) accumulated net migration. In this calculation, net migration was the algebraic sum of all arrivals *less* all departures, recorded for shipping and aircraft (Tasmania) and for shipping, aircraft, rail and omnibus movements (other States); it therefore included overseas and interstate travel irrespective of purpose. The interstate component of net migration was obviously a composite figure, affected by persons who had permanently changed their State of residence, but even more by persons who had merely visited another State on business or holiday.

The new method of estimation, introduced after the 1966 Census, still relies on the same three components but defines and measures net migration in a different way, so that holiday, business or other similar short-term movements between States are eliminated. *Intercensal estimates for the period 1961-1966 have been revised in accordance with the new method, and incorporate the changed concept of net migration.*

In the new method, the State population is estimated by adding to the previous census population the natural increase and the allocation of the net gain to Australia by overseas migration for that State; gains or losses that result from movements between States are also taken into account, in so far as they are recorded as transfers of residence under child endowment procedures or Commonwealth Electoral procedures, supplemented by the results of any sample surveys. Revised estimates subsequent to the 1961 Census omit the effect of holiday, business or other similar short-term movements between the States.

Mean Population

Mean populations are calculated for twelve-month periods to provide a satisfactory average basis for calculations requiring allowance for the continuous change in population figures during such periods. From 1901 onwards, the mean population for any year has been calculated by the formula:

$$\text{Mean population} = \frac{a + 4b + 2c + 4d + e}{12}$$

where *a* is the population at the end of the quarter immediately preceding the year and *b*, *c*, *d* and *e* are the populations at the end of the quarters making up the year under consideration (e.g. in the case of a mean population for the calendar year 1960, the populations in the formula represented by *a*, *b*, *c*, *d* and *e* are those at the following dates: 31.12.1959, 31.3.1960, 30.6.1960, 30.9.1960 and 31.12.1960).

The following table shows the State's mean population on two bases: (i) for financial years; (ii) for calendar years.

Mean Population, Financial and Calendar Years

Year	Estimated Mean Population		Year	Estimated Mean Population	
	Year Ended 30 June	Year Ended 31 December		Year Ended 30 June	Year Ended 31 December
1960 ..	344,111	346,913	1965 ..	366,366	367,970
1961 ..	350,077	353,628	1966 ..	369,600	371,632
1962 ..	353,175	355,682	1967 ..	373,916	376,588
1963 ..	358,180	360,590	1968 ..	379,367	382,298
1964 ..	362,758	364,554	1969 ..	385,685	388,646

Arrivals and Departures

Earlier in this chapter, reference was made to net migration as one factor determining the growth of the State's population. Net migration, on a *de facto* basis for any period, is the difference between arrivals and departures, such movements being reported by the shipping companies and airlines. 'Arrivals' in the following table applies to all persons arriving in Tasmania from overseas or from other Australian States; it includes Tasmanians returning home. Similarly, 'departures' applies to all persons leaving Tasmania for overseas or for other Australian States; it includes visitors returning home. The table below shows annual arrivals and departures and also quarterly arrivals and departures for recent years, but the intercensal adjustments referred to in an earlier section have not been applied to the figures.

Recorded Arrivals In and Departures From Tasmania, Interstate and Overseas (a)

Year	Arrivals	Departures	Quarter	Arrivals	Departures
1958 ..	141,814	141,995	1967—March Qtr ..	85,186	92,476
1959 ..	162,761	160,569	June Qtr ..	57,899	61,612
1960 ..	182,537	183,513	September Qtr ..	55,224	54,734
1961 ..	186,423	184,165	December Qtr ..	72,625	62,738
1962 ..	185,268	186,023	1968—March Qtr ..	76,316	82,408
1963 ..	198,443	199,918	June Qtr ..	62,863	66,766
1964 ..	219,930	223,380	September Qtr ..	53,307	53,684
1965 ..	248,964	249,619	December Qtr ..	81,737	71,369
1966 ..	257,463	256,068	1969—March Qtr ..	83,019	88,119
1967 ..	270,934	271,560	June Qtr ..	68,160	76,073
1968 ..	274,223	274,227	September Qtr ..	59,045	59,574
1969 ..	296,186	297,069	December Qtr ..	85,962	73,303

(a) Arrivals and departures on a *de facto* basis.

If annual arrivals and departures are added, the result may conveniently be termed 'annual movements' and a comparison of 'annual movements' over the years gives some indication of the degree to which travel and tourism have affected the State. Thus, in 1901, the year of Federation, annual arrivals and departures together totalled 51,000; in 1913, 91,800; in 1931, 58,500; in 1939, 120,200 and in 1969, almost 600,000. The increase in 'annual movements' since World War II is largely attributable to the growing use of air travel and roll-on roll-off ferries. Another factor has been industrial legislation providing for paid holidays (two weeks' leave was increased to three weeks' by the Federal Arbitration Commission in 1963); this has not only increased the tourist inflow but also has resulted in more Tasmanians taking holidays in other States.

The quarterly figures show a marked seasonal pattern with arrivals at their maximum in the spring and summer quarters (those ending December and March). Net migration figures on a *de facto* basis also show a seasonal pattern with substantial deviations from the quarterly average, approximating *plus* 11,000 persons in the December quarter; they also reflect the tourist outflow in the March quarter.

Population in Local Government Areas

The next table shows the population in cities, municipalities and statistical divisions at the Censuses of 1954, 1961 and 1966, and estimated for 1970. A new development following from the 1966 Census was the creation of the Hobart Statistical Division, comprising three complete and *portions* of four local government areas. The following symbols are used in the table to indicate the Division (or Divisions) to which certain local government areas belong: (H)—Hobart Statistical Division; (SE)—South Eastern Statistical Division. (S)—Southern Statistical Division. Some Local Government Areas (e.g. Brighton) form part of two Statistical Divisions.

The creation of the Hobart Statistical Division has had the effect of reducing the area of the Southern and South Eastern Statistical Divisions. (For fuller details, see subsequent section headed 'Population Centred on Hobart'.)

Population in Local Government Areas and Statistical Divisions at 30 June

Local Government Area (Statistical Division in Bold Type)				Census			Estimated 1970 (b)
				1954	1961	1966	
Hobart	(H)	..	..	54,887	54,021	53,257	52,900
Glenorchy	(H)	..	..	25,810	35,682	39,053	42,740
Clarence	(H)	..	..	12,604	23,140	30,236	35,100
Brighton	(H) (SE)	..	..	2,570	2,115	2,207	2,330
Glamorgan	(SE)	..	..	1,099	1,128	1,125	1,110
Green Ponds	(SE)	..	..	949	969	880	830
Richmond	(SE)	..	..	1,679	1,673	1,658	1,610
Sorell	(H) (SE)	..	..	2,391	2,878	3,309	3,560
Spring Bay	(SE)	..	..	1,048	1,155	1,205	1,260
Bruny	(S)	..	..	591	504	400	390
Esperance	(S)	..	..	3,200	3,436	3,740	3,710
Huon	(S)	..	..	5,615	5,460	5,264	5,030
Kingborough	(H) (S)	..	..	8,335	10,025	10,322	10,610
New Norfolk	(H) (S)	..	..	9,429	10,217	10,315	10,900
Port Cygnet	(S)	..	..	2,861	2,754	2,550	2,390
Tasman	(S)	..	..	1,079	1,108	1,126	1,170
Hobart	..	..	..	134,147	(a) 130,236	141,311	150,910
South Eastern	..	..	..		(a) 7,116	7,123	6,920
Southern	..	..	..		(a) 18,913	18,213	17,810
Launceston	..	..	..	37,627	38,118	37,217	36,620
North Central	..	..	..	37,627	38,118	37,217	36,620
Burnie	..	..	..	13,785	16,745	18,611	20,060
Circular Head	..	..	..	7,568	7,733	7,884	8,400
Deloraine	..	..	..	5,477	5,574	5,205	5,110
Devonport	..	..	..	11,827	14,276	16,758	19,240
Kentish	..	..	..	4,510	4,167	5,614	6,000
King Island	..	..	..	2,554	2,784	2,462	2,490
Latrobe	..	..	..	4,145	4,367	4,807	5,190
Penguin	..	..	..	3,889	4,673	4,677	5,000
Ulverstone	..	..	..	8,091	9,365	10,150	11,220
Wynyard	..	..	..	7,394	8,835	9,564	10,680
North Western	..	..	..	69,240	78,519	85,732	93,390

Population in Local Government Areas and Statistical Divisions at 30 June—*continued*

Local Government Area (Statistical Division in Bold Type)	Census			Estimated 1970 (b)
	1954	1961	1966	
Beaconsfield	7,573	8,550	9,983	11,100
Fingal	4,418	4,475	3,791	3,580
Flinders	1,027	1,407	1,234	1,180
George Town	2,516	3,677	5,101	5,690
Lilydale	4,583	6,744	7,841	8,350
Portland	1,412	1,274	1,391	1,480
Ringarooma	3,440	3,056	2,866	2,650
Scottsdale	3,189	3,417	3,628	3,820
North Eastern	28,158	32,600	35,835	37,850
Evandale	1,676	1,608	1,554	1,470
Longford	4,345	6,762	5,354	5,210
St Leonards	7,095	11,032	13,660	15,250
Westbury	3,974	4,581	4,964	5,130
North Midland	17,090	23,983	25,532	27,060
Bothwell	1,260	1,288	1,008	920
Campbell Town	1,919	1,893	1,753	1,590
Hamilton	6,143	4,178	4,329	4,210
Oatlands	2,914	2,691	2,501	2,330
Ross	680	672	617	610
Midland	12,916	10,722	10,208	9,660
Gormanston	523	507	540	600
Queenstown	4,497	4,624	4,393	4,600
Strahan	574	565	470	430
Waratah	514	367	698	1,960
Zeehan	2,816	3,191	3,489	4,000
Western	8,924	9,254	9,590	11,590
Migratory	650	879	675	650
Total Tasmania	308,752	350,340	371,436	392,460

(a) These figures are partly estimated (see section prefacing table).

(b) Figures rounded to nearest ten.

Distinction Between Urban and Rural

After the Censuses of 1954 and 1961, the Commonwealth Statistician published a population classification using the terms 'metropolitan', 'urban' and 'rural'. Delineation of the urban boundaries was subjective and the methods used were not completely comparable between States.

In order to develop an objective definition of 'urban' and 'rural' areas, intensive research into the problem was undertaken by Dr G. J. R. Linge of the Australian National University.

At the 27th Conference of Statisticians in 1965, the following resolutions relating to the delimitation of urban areas and based substantially on Dr Linge's report were passed:

- (i) (a) That the new concept of an *inner* and *outer* boundary around each of the State capitals and other cities with an urban population of at least 75,000 and a regional population of at least 100,000 be adopted; and
- (b) that the inner boundary be drawn to delimit the extent of urban development at each Census and it should therefore, be a moving boundary to be adjusted after each Census, except that any State may extend the inner boundary during intercensal years to encompass significant and well-defined peripheral population growth; and
- (c) that the outer boundary be designed to contain the anticipated urban development of a city for a period of at least 20 to 30 years.
- (ii) (a) That an urban boundary be defined as soon as possible for all other settlements with a population of 1,000 or more; and
- (b) that State, Statistical Division, Local Government Area, and other boundaries be ignored in delimiting these urban areas.
- (iii) That urban boundaries be defined so as to include all contiguous census collectors' districts which have a population density of 500 or more per square mile (subject to certain special rules).

Effect of Change in Tasmania

The resolution previously quoted as (i) affected only one centre in Tasmania, since only the Hobart area has 'an urban population of at least 75,000 persons and a regional population of at least 100,000'. Resolutions (ii) and (iii) affected all other cities and towns, including Launceston. The concept of ringing the capital city with two statistical boundaries, an inner and an outer, was discussed in depth in the 1968 and 1969 *Year Books*. The following section broadly outlines the current situation in Tasmania.

Population Centred on Hobart

The Basic Criterion (1966 Census)

The basic criterion adopted for the delimitation of urban boundaries was *population density* as applied to small areas. As urbanisation increases, the change from rural to urban uses is accompanied by increasing population density. Extensive field investigations have shown that areas at the fringe, which have largely lost their rural characteristics and are developing towards urbanisation, have densities varying over only a small range. The adoption of a specific density from within that range provided a criterion which adequately delimits urban boundaries, and which can be applied objectively, uniformly, easily and without undue delay. *The criterion adopted was a density of 500 or more persons per square mile.* The geographic units classified according to the density criterion are census collectors' districts, the smallest units available. These areas vary in size and shape, but as far as possible they have been designed to ensure that significant urban development in large rural collectors' districts is split off as a separate collector's district.

Rigid application of the 500-person density criterion in every case would have created non-urban enclaves in obviously urban areas, e.g. sports grounds, industrial sites, etc., so special rules had to be formulated. The special rules are set out in the 1968 *Year Book*.

The Two-Boundary Concept

For the purpose of presenting the 1966 Census results, *two* boundaries were drawn:

(i) a fixed *Outer Boundary* (*Hobart Statistical Division*) enclosing the area of expected urban growth during the next 20 to 30 years (broadly this comprises the Cities of Hobart and Glenorchy, Clarence municipality and parts of Kingborough, New Norfolk, Brighton and Sorell municipalities); and

(ii) a flexible *Inner Boundary* (*Urban Hobart*) which moves outwards towards (i) as urbanisation develops. This area was formerly known as the *Hobart Metropolitan Area* and comprises the continuous area of urban development from Tarooma in the south to Granton including the Cities of Hobart and Glenorchy and the eastern shore suburbs from Risdon Vale southward to Trammere.

A detailed account of the *Two-Boundary Concept* was included in the 1970 *Year Book*.

The Hobart Statistical Division

The next table shows the population of the components of the *Hobart Statistical Division* at the Census of 1966, and also gives comparative figures from the Census of 1961. (To obtain the 1961 figures, it was necessary to draw boundaries according to the new criteria and to use some estimations.)

Population of Hobart Statistical Division (a)

Components	Census, 30 June 1961	Census, 30 June 1966			Intercensal Increase	
		Males	Females	Persons	Number	Per Cent
Urban Hobart (b)	110,217	58,537	60,932	119,469	9,252	8.39
Other Urban Centres—						
Urban New Norfolk	5,494	2,875	2,895	5,770	276	5.02
Urban Kingston	2,980	1,630	1,633	3,263	283	9.50
Urban Sorell-Midway Pt	1,264	849	803	1,652	388	30.70
Urban Lauderdale	649	461	455	916	267	41.14
Total Other Urban	10,387	5,815	5,786	11,601	1,214	11.69
Total Urban	120,604	64,352	66,718	131,070	10,466	8.68
Rural	9,632	5,278	4,963	10,241	609	6.32
Total Hobart Statistical Division	130,236	69,630	71,681	141,311	11,075	8.50

(a) See 'Post-censal Estimates' immediately following for latest data.

(b) This concept replaces the obsolete classification *Hobart and Suburbs*.

Post-censal Estimates: At 30 June 1970, the population estimate for the *Hobart Statistical Division* was 150,910 persons, made up of 127,260 in *Urban Hobart* and 23,650 elsewhere in the Division.

Comparisons: The increase from 1961-1966 for the *Hobart Statistical Division* relates to the population within the fixed outer boundary, i.e. the area is the same in both censuses; for *Urban Hobart* the intercensal increase 1961-1966 reflects: (i) population changes within the 1961 boundaries; (ii) urban growth beyond these boundaries as contained by the 1966 boundaries.

Population Centred on Launceston

Population of Launceston and Suburbs

In 1891 the Tasmanian Government Statistician first published figures for an area called *Launceston and Suburbs* which comprised Launceston City plus the urban areas of surrounding municipalities; a practice continued until 1966. In 1966, to coincide with the population census, the new terminology *Urban Launceston* was adopted in lieu of *Launceston and Suburbs*; however, at the time of this change, the *Urban Launceston* boundary differed very little from that of the former *Launceston and Suburbs*.

Urban Launceston's population at 30 June was: 1961 Census, 56,465 persons; 1966 Census, 60,456; 1970 (estimate), 62,500.

Urban and Rural Population of Tasmania

The population density criteria were applied uniformly throughout Tasmania after the 1966 Census and the next table has been compiled to show a dissection of each local government area into urban and rural components; *Urban Hobart* and *Urban Launceston* are specified separately but it should be noted that these two areas are identical in statistical concept with other urban localities.

The localities classified as urban had to have populations exceeding 1,000 persons, but special rules applied to holiday resorts where housing density was taken into account. The urban-rural dissection for Tasmania follows:

Population in Local Government Areas Classified as Urban and Rural
at Census, 30 June 1966

Local Government Area (Statistical Division in Bold Type)				Total	Rural	Urban Hobart	Urban Launceston	Other Urban (a)
Hobart	(H)	..	..	53,257	1,118	52,139	..	..
Glenorchy	(H)	..	..	39,053	1,283	37,770	..	..
Clarence	(H)	..	..	30,236	2,334	26,986	..	916
Brighton	{(H)	..	..	2,207	{1,150	..	..	..
	{(SE)	..	..		{1,057	..	..	..
Glamorgan	(SE)	..	..	1,125	1,125	..	..	..
Green Ponds	(SE)	..	..	880	880	..	..	..
Richmond	(SE)	..	..	1,658	1,658	..	..	..
Sorell	{(H)	..	..	3,309	{459	..	..	1,652
	{(SE)	..	..		{1,198	..	..	..
Spring Bay	(SE)	..	..	1,205	1,205	..	..	..
Bruny	(S)	..	..	400	400	..	..	..
Esperance	(S)	..	..	3,740	3,740	..	..	..
Huon	(S)	..	..	5,264	5,264	..	..	..
Kingborough	{(H)	..	..	10,322	{3,363	2,574	..	3,263
	{(S)	..	..		{1,122	..	..	..
New Norfolk	{(H)	..	..	10,315	{534	..	..	5,770
	{(S)	..	..		{4,011	..	..	..
Port Cygnet	(S)	..	..	2,550	2,550	..	..	..
Tasman	(S)	..	..	1,126	1,126	..	..	..
Hobart	..	..	..	141,311	10,241	119,469	..	11,601
South Eastern	..	..	..	7,123	7,123	..	..	..
Southern	..	..	..	18,213	18,213	..	..	..
Launceston	..	..	..	37,217	..	..	37,217	..
North Central	..	..	..	37,217	..	..	37,217	..

Local Government Area (Statistical Division in Bold Type)	Total	Rural	Urban Hobart	Urban Launceston	Other Urban (a)
Burnie	18,611	2,805	..	..	15,806
Circular Head	7,884	5,186	..	..	2,698
Deloraine	5,205	3,412	..	..	1,793
Devonport	16,758	1,883	..	..	14,875
Kentish	5,614	5,614	..	..	..
King Island	2,462	2,462	..	..	..
Latrobe	4,807	2,566	..	..	2,241
Penguin	4,677	2,528	..	..	2,149
Ulverstone	10,150	3,308	..	..	6,842
Wynyard	9,564	3,973	..	..	5,591
North Western	85,732	33,737	..	..	51,995
Beaconsfield	9,983	4,179	..	3,903	1,901
Fingal	3,791	3,791	..	..	..
Flinders	1,234	1,234	..	..	..
George Town	5,101	1,015	..	..	4,086
Lilydale	7,841	2,254	..	5,587	..
Portland	1,391	1,391	..	..	..
Ringarooma	2,866	2,866	..	..	..
Scottsdale	3,628	1,930	..	..	1,698
North Eastern	35,835	18,660	..	9,490	7,685
Evandale	1,554	1,527	..	27	..
Longford	5,354	2,664	..	..	2,690
St Leonards	13,660	877	..	12,783	..
Westbury	4,964	4,025	..	939	..
North Midland	25,532	9,093	..	13,749	2,690
Bothwell	1,008	1,008	..	..	..
Campbell Town	1,753	1,753	..	..	..
Hamilton	4,329	4,329	..	..	..
Oatlands	2,501	2,501	..	..	..
Ross	617	617	..	..	..
Midland	10,208	10,208	..	..	..
Gormanston	540	540	..	..	..
Queenstown	4,393	98	..	..	4,295
Strahan	470	470	..	..	..
Waratah	698	698	..	..	..
Zeehan	3,489	698	..	..	2,791
Western	9,590	2,504	..	..	7,685
Migratory	675	..	..	..	..
Total Tasmania	371,436	109,779	119,469	60,456	81,057

(a) Details of urban localities are given in the next section. The last three columns of the table list the Local Government Areas classified as *urban*; a more detailed analysis of urban areas is shown below.

Details of Urban Localities

In the previous table, each local government area has been dissected to show the distribution of its population, the final column reading 'Other Urban'. The next table gives details of the localities classified as urban (but excludes Urban Hobart and Urban Launceston).

Populations in Localities Classified as Urban (Excluding Urban Hobart and Urban Launceston) at Census of 30 June 1966

Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality	Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality
Lauderdale ..	Clarence ..	(b) 916	Ulverstone ..	Ulverstone ..	6,842
Sorell ..	Sorell ..	1,652	Wynyard ..	Wynyard ..	3,355
Kingston ..	Kingborough ..	3,263	Beaconsfield ..	Beaconsfield ..	1,028
New Norfolk ..	New Norfolk ..	5,770	Beauty Point ..	Beaconsfield ..	(b) 873
Burnie-Somerset ..	Burnie ..	15,806	George Town ..	George Town ..	4,086
Burnie-Somerset ..	Wynyard ..	2,236	Scottsdale ..	Scottsdale ..	1,698
Smithton ..	Circular Head ..	2,698	Longford ..	Longford ..	1,688
Deloraine ..	Deloraine ..	1,793	Perth ..	Longford ..	1,002
Devonport ..	Devonport ..	14,875	Queenstown ..	Queenstown ..	4,295
Latrobe ..	Latrobe ..	2,241	Rosebery ..	Zeehan ..	1,774
Penguin ..	Penguin ..	2,149	Zeehan ..	Zeehan ..	1,017

(a) See previous table for *total* population of Local Government Area.

(b) Defined as *urban* under special rules relating to *resort areas*.

Full details of Urban Hobart and the Hobart Statistical Division follow:

Population of the Hobart Statistical Division at Census of 30 June 1966

Local Government Area	Total	Rural	Urban Hobart	Other Urban	Locality Classified as Urban
Hobart	53,257	1,118	52,139	..	..
Glenorchy	39,053	1,283	37,770	..	..
Clarence	30,236	2,334	26,986	916	Lauderdale (a)
Brighton (Part) ..	1,150	1,150	..	..	..
Sorell (Part)	2,111	459	..	1,652	Sorell ..
Kingborough (Part) ..	9,200	3,363	2,574	3,263	Kingston
New Norfolk (Part) ..	6,304	534	..	5,770	New Norfolk
Total Hobart Div...	141,311	10,241	119,469	11,601	..

(a) Defined as *urban* under the special rules relating to *resort areas*.

The analysis of the Local Government Areas enclosing Launceston follows:

**Population of Launceston and Surrounding Local Government Areas
at Census of 30 June 1966**

Local Government Area (a)	Total	Rural	Urban Launceston	Other Urban	Locality Classified as Urban
Launceston (N. Central)	37,217	..	37,217	..	..
Beaconsfield (NE) ..	9,983	4,179	3,903	{ 1,028 873	{ Beaconsfield (b) Beauty Point
Evandale (N. Mid.) ..	1,554	1,527	27	..	..
Lilydale (NE)	7,841	2,254	5,587	..	..
St Leonards (N. Mid.) ..	13,660	877	12,783	..	..
Westbury (N. Mid.) ..	4,964	4,025	939	..	..
Total ..	(c)	(c)	(c)60,456	(c)	..

(a) Statistical Division shown in brackets.

(b) Defined as *urban* under the special rules relating to *resort areas*.

(c) Total distributed in North Central, North Eastern and North Midland Statistical Divisions.

Post-censal Locality Estimates: At 30 June 1970, the estimated populations of selected urban localities were: Urban Hobart, 127,260; Urban Launceston, 62,500; Burnie-Somerset, 19,710; Devonport, 17,120; Ulverstone, 7,580; New Norfolk, 6,350.

Decentralisation of Population

The next table compares the proportions of urban and rural population of the Australian States at the Census of 30 June 1966. (In the table, Urban Launceston is included with 'Other Urban'.)

**Proportion of Urban and Rural Population, Australian States and Territories
at Census of 30 June 1966
(Per Cent)**

Classification	Proportion of Total Population of State								
	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Urban—									
Metropolitan	57.78	65.54	43.21	66.67	59.76	32.16	..	96.14	58.14
Other ..	28.61	19.97	33.55	15.92	16.76	38.10	76.81	..	25.08
Rural ..	13.40	14.39	23.12	17.27	23.11	29.55	22.40	3.86	16.61
Migratory ..	0.21	0.10	0.12	0.14	0.37	0.18	0.79	..	0.17
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Populations of Australian Capital Cities

The populations of Australian capital cities at Censuses since 1901 are shown in the following table:

Australia: Populations of Capital Cities (a) at Census Dates (b)

Metropolitan Area (c)	1901	1921	1933	1947	1954	1961 (d)	1966 (d)
Sydney	482	899	1,235	1,484	1,863	2,197	2,446
Melbourne	496	783	992	1,226	1,524	1,859	2,110
Brisbane	119	210	300	402	502	588	719
Adelaide	162	256	313	382	484	580	728
Perth	67	155	208	273	349	424	500
Hobart	35	52	60	77	95	110	119
Canberra .. ..	..	..	7	15	28	56	92
Total	1,361	2,355	3,115	3,859	4,845	5,814	6,714
Percentage of Total Australian Population ..	36	43	47	51	54	55	58

(a) Full-blooded Aborigines are not included in this table.

(b) Census of 1911 not shown.

(c) Some of the apparent increase in the percentage of total population living in capital cities is due to periodic revision and extension of metropolitan boundaries.

(d) *Objective density criterion* introduced in 1966 Census, the 1961 figures being revised on a comparable basis.

The following table lists the major Australian cities and towns with a population of over 25,000. The Tasmanian towns of Burnie-Somerset and Devonport with populations less than 25,000 have also been included.

Population of Principal Cities and Towns (a): States and Territories

City or Town	At 30 June		City or Town	At 30 June	
	1966 (b)	1969 (c)		1966 (b)	1969 (c)
New South Wales—			Queensland—		
Sydney—			Brisbane—		
Sydney City ..	159,531	(d)68,600	Brisbane City ..	656,612	693,050
Statistical Div. (e)	2,542,207	2,712,610	Statistical Division	778,193	833,400
Newcastle—			Townsville ..	59,135	66,400
Newcastle City ..	143,070	144,860	Toowoomba ..	55,813	59,200
Statistical Dist. (f)	327,578	342,950	Gold Coast ..	49,495	60,500
Wollongong—			Rockhampton ..	46,246	47,600
Greater Wollongong ..	149,523	160,630	South Australia—		
Statistical Dist. (g)	177,456	196,330	Adelaide—		
Greater Cessnock ..	34,521	34,400	Adelaide City ..	18,619	16,800
Blue Mountains ..	30,733	33,100	Statistical Division	771,561	808,600
Broken Hill ..	30,043	30,420	Western Australia—		
Wagga Wagga ..	25,820	27,580	Perth—		
Albury ..	25,112	26,700	Perth City ..	96,322	97,000
Victoria—			Statistical Division	559,298	635,500
Melbourne—			Tasmania—		
Melbourne City ..	76,006	76,500	Hobart—		
Statistical Division	2,230,793	2,372,700	Hobart City ..	53,257	52,810
Geelong—			Statistical Division	141,311	147,800
Geelong City ..	18,129	18,220	Launceston—		
Statistical District	111,365	117,340	Launceston City ..	37,217	36,700
Ballarat—			Urban City ..	60,456	62,390
Ballarat City ..	41,661	41,890	Burnie-Somerset ..	18,042	19,550
Bendigo—			Devonport ..	14,875	16,600
Bendigo City ..	30,806	31,520	Northern Territory		
			Darwin—		
			Darwin City ..	18,695	25,200
			Aust. Capital City—		
			Canberra		
			Canberra City Dist.	93,314	119,214
			Statistical Dist. (h)	107,138	134,600

(a) Full-blooded Aborigines included in this table. (b) Population at Census date. (c) Estimate. (d) From 1 August 1968 parts of the City of Sydney were transferred to the Municipalities of Leichardt, Marrickville and Woolahra and a further area was constituted as the Municipality of Northcott (renamed South Sydney on 1 December 1968). (e) Includes part of Blue Mountains. (f) Includes Maitland and the majority of Greater Cessnock. (g) Includes Shellharbour. (h) Includes Queanbeyan.

CHARACTERISTICS OF POPULATION

Age Distribution

Census figures for age are subject to inaccuracies, e.g. preference for certain ages. The 1966 Census figures (benchmarks for intercensal age distribution estimates) have been adjusted for these inaccuracies. Therefore, in the following table age distribution figures for the 1966 Census will differ slightly from the census age distribution figures published in the 1969 *Year Book*.

The estimated age distribution for 1969 is based on adjusted 1966 Census figures and subsequent records of births, deaths, arrivals and departures. The adjusting and updating procedures used are not sufficiently accurate to allow preparation of estimates down to the last unit. Therefore in the next table, the population figures are given to the nearest ten.

Age Distribution of the Population at 30 June

Age Last Birthday (Years)	1966 (Census) (a)			1969 (Estimate)		
	Males	Females	Persons	Males	Females	Persons
	no.	no.	no.	no.	no.	no.
0- 4	20,670	19,710	40,380	19,800	18,820	38,620
5- 9	21,340	20,350	41,690	22,040	20,870	42,910
10-14	19,500	18,780	38,280	20,600	19,570	40,170
15-19	17,730	17,250	34,980	18,880	18,000	36,880
20-24	13,010	12,690	25,700	15,770	15,510	31,280
25-29	11,930	11,280	23,210	12,890	11,950	24,840
30-34	10,930	10,220	21,150	11,440	10,900	22,340
35-39	11,940	10,960	22,900	11,500	10,570	22,070
40-44	12,000	11,530	23,530	12,090	11,160	23,250
45-49	10,610	10,340	20,950	11,490	11,370	22,860
50-54	10,320	9,810	20,130	10,010	9,910	19,920
55-59	8,530	7,990	16,520	9,490	9,070	18,560
60-64	6,560	6,460	13,020	7,320	7,140	14,460
65-69	4,750	5,580	10,330	5,130	5,890	11,020
70-74	3,330	4,730	8,060	3,470	4,780	8,250
75-79	2,380	3,430	5,810	2,240	3,570	5,810
80-84	1,230	1,860	3,090	1,290	2,170	3,460
85 and Over ..	640	1,080	1,720	590	1,170	1,760
Total	187,390	184,050	371,440	196,040	192,420	388,460

(a) The actual population at 30 June 1966 was 371,435 persons comprising 187,390 males and 184,045 females.

Conjugal Condition

The next table shows the conjugal condition of the population at the Census of 1966 compared with that of the previous Census of 1961:

Conjugal Condition of the Population

Conjugal Condition	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Pro-portion of Total			Total	Pro-portion of Total
Never Married—		per cent				per cent
Under 15 years of age	117,299	33.48	61,396	58,768	120,164	32.35
15 years and over	58,039	16.57	37,078	27,287	64,365	17.33
Total	175,338	50.05	98,474	86,055	184,529	49.68
Married	153,014	43.68	81,811	81,320	163,131	43.92
Married but permanently separated ..	4,096	1.17	2,090	2,200	4,290	1.15
Widowed	15,563	4.44	3,782	13,177	16,959	4.57
Divorced	2,329	0.66	1,233	1,293	2,526	0.68
Grand Total ..	350,340	100.00	187,390	184,045	371,435	100.00

Birthplaces of the Population

The following table showing birthplaces of the population at the Censuses of 1961 and 1966, is of particular interest in view of the Commonwealth's post-war policy of actively encouraging migration from Europe. From the figures it is noticeable that the proportional representation of the immigrants'

birthplaces has not varied significantly in the intercensal period 1961 to 1966. Apart from those born in the United Kingdom and Eire, there has been a marked levelling off in the numbers of persons of European birth. Although Greece and Yugoslavia are also exceptions to this trend, the total numbers involved are too small to be very significant.

Birthplaces of the Population

Birthplace	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Pro-portion of Total			Total	Pro-portion of Total
		per cent				per cent
Australia and Territories ..	317,478	90.62	167,572	168,100	335,672	90.37
New Zealand	1,128	0.32	617	620	1,237	0.33
United Kingdom and Eire ..	16,741	4.78	9,911	9,190	19,101	5.14
Germany	2,223	0.63	1,137	879	2,016	0.54
Greece	489	0.14	451	304	755	0.20
Italy	1,536	0.44	918	530	1,448	0.39
Netherlands	3,556	1.02	1,809	1,558	3,367	0.91
Poland	1,608	0.46	1,064	503	1,567	0.42
Yugoslavia	699	0.20	588	233	821	0.22
Other European Countries ..	2,993	0.85	1,842	1,048	2,890	0.78
Total Europe ..	29,845	8.52	17,720	14,245	31,965	8.61
Other Birthplaces	1,889	0.54	1,481	1,080	2,561	0.69
Grand Total ..	350,340	100.00	187,390	184,045	371,435	100.00

The analysis of the birthplaces of the population at 30 June 1966 can be viewed broadly as a measure of the degree to which migration from overseas has contributed to population growth over a long period.

The next table contrasts the position in the various States and Territories at 30 June 1966:

Australia: Birthplaces of the Population, Census of 30 June 1966 Proportion of Population of State or Territory According to Birthplace (Per Cent)

Birthplace	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Australia and Territories ..	82.73	78.89	87.99	77.50	76.27	90.37	77.64	73.70	81.61
New Zealand ..	0.61	0.36	0.46	0.20	0.32	0.33	0.95	0.81	0.45
U.K. and Eire ..	7.20	7.44	6.38	11.18	12.44	5.14	8.25	10.24	7.87
Other European Countries ..	7.69	11.76	4.10	10.11	8.73	3.46	10.11	12.80	8.53
Other Birthplaces ..	1.77	1.55	1.07	1.01	2.24	0.69	3.05	2.46	1.54
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be observed that the Tasmanian pattern differs significantly from that of other States and Territories, the most similar being that of Queensland. Tasmania has the highest percentage of 'Australian' born of any State. The

percentage of 'non-British' born, i.e. those born outside the British Commonwealth and Eire, is the lowest of any State. The following table shows particulars of the period of residence in Australia of persons born outside Australia, both for Tasmania and for the Commonwealth.

Period of Residence in Australia of Persons Born Outside Australia
at Census of 30 June 1966

Period of Residence (Years)	Tasmania		Australia	
	Persons		Persons	
	Total	Proportion of Total	Total	Proportion of Total
		per cent		per cent
Born Outside Australia—				
Under 1	2,566	0.69	161,861	1.40
1 and under 2	1,838	0.49	124,341	1.08
2 and under 3	1,494	0.40	110,329	0.96
3 and under 4	1,020	0.27	88,038	0.76
4 and under 5	993	0.27	72,902	0.63
Total Under 5	7,911	2.13	557,471	4.83
5 and Over	27,078	7.29	1,527,072	13.22
Not Stated	864	0.23	46,378	0.40
Total Born Outside Australia	35,853	9.65	2,130,921	18.45
Born in Australia	335,582	90.35	9,419,542	81.55
Grand Total	371,435	100.00	11,550,463	100.00

Nationality of Population

Comparable percentages of persons of British nationality at 30 June 1966 were: N.S.W., 95.79; Victoria, 93.61; Queensland, 98.28; S.A., 95.24; W.A., 96.26; Tasmania, 98.46; N.T., 93.17; A.C.T., 92.51; Australia, 95.58. It should be noted that the Federal *Nationality and Citizenship Act* 1948 created, for the first time, the status of 'Australian citizen'; all Australian citizens under the provisions of this Act are declared to be British subjects. From the earlier table on birthplaces of the Tasmanian population, it is established that 95.84 per cent were born in Australia, N.Z., the United Kingdom or Eire. While birthplace does not necessarily determine nationality in all cases, comparison of birthplace with nationality suggests that the percentage of naturalised British subjects was probably less than three per cent of the Tasmanian population at 30 June 1966.

The question has been asked: why is there no mention of 'Australian' as a separate nationality in census tables? The chief difficulty lies in the fact that persons born in the United Kingdom, New Zealand, Eire, Canada, and other proclaimed countries with British links, may permanently reside in Australia, enjoy the same privileges as native-born citizens but never take any formal steps to acquire Australian citizenship; such persons at the time of a census, may report their nationality as 'Irish', 'Australian' or 'British'. A further difficulty is that some native-born citizens may report their nationality as 'British', rather than 'Australian'. Accordingly, no attempt is made to isolate Australian citizens in the British group.

The following table shows the nationality of the Tasmanian population at 30 June 1966 and also at 30 June 1961:

Nationality (i.e. Allegiance) of the Population

Nationality	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Pro-portion of Total			Total	Pro-portion of Total
		per cent				per cent
British (a)—						
Born in Australia	317,478	90.62	167,531	168,051	335,582	90.35
Born Outside Australia ..	24,927	7.12	16,345	13,795	30,140	8.11
Total British	342,405	97.74	183,876	181,846	365,722	98.46
Foreign—						
Dutch	2,241	0.64	685	580	1,265	0.34
German	1,223	0.35	467	325	792	0.21
Greek	384	0.11	325	231	556	0.15
Italian	1,213	0.35	550	363	913	0.25
Polish	649	0.19	257	160	417	0.11
Yugoslavian	397	0.11	270	108	378	0.10
Other (incl. Stateless) ..	1,828	0.52	960	432	1,392	0.37
Total Foreign	7,935	2.26	3,514	2,199	5,713	1.54
Grand Total	350,340	100.00	187,390	184,045	371,435	100.00

(a) All persons of individual citizenship status who, by virtue of the Federal *Nationality and Citizenship Act 1948*, are deemed to be British subjects. Includes naturalised British. For purposes of this table, Irish nationality is included with British.

Occupational Status

Lack of Comparability

The comparison in the next table is *approximate only*, since the method of classifying the occupational status of the population was changed in the 1966 Census; one result of this change was to classify as labour force some persons who would possibly have excluded themselves in the 1961 Census. The essential difference between the pre-1966 approach to labour force and the 1966 approach was this: in the pre-1966 censuses, people were invited to classify themselves (e.g. as unemployed, employee, etc.); in the 1966 Census, people were invited to describe their *activity* in a specific week and the Statistician, using pre-determined definitions, classified them on the basis of their answers.

The effect of the new approach and definitions was to include additional persons in the labour force. This applied particularly to those working part-time (sometimes for only a few hours a week) some of whom in 1961 may not have considered themselves as '... engaged in an industry, business, profession, trade or service'.

The new method of classification is fully discussed in Chapter 10, 'Labour, Prices and Wages', the relevant sections being headed 'Employment' and 'Unemployment'. 'At Work' was the classification employed at the 1961 Census; the 1966 equivalent was 'Employed', a changed concept.

The table below shows the occupational status of persons in the labour force at the respective census dates (30 June 1961 and 1966):

Occupational Status: Analysis of Those in Labour Force

Occupational Status	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Proportion of Labour Force			Total	Proportion of Labour Force
In Labour Force—		per cent				per cent
At Work—						
Employer	8,221	6.28	8,245	1,759	10,004	6.79
Self-Employed	13,191	10.08	9,162	1,644	10,806	7.33
Employee (a)	104,716	79.99	87,572	35,451	123,023	83.51
Helper (b)	699	0.53	432	940	1,372	0.93
Total Employed	126,827	96.88	105,411	39,794	145,205	98.56
Not at Work—						
Unemployed (c)	2,592	1.98	1,146	971	2,117	1.44
Others not at Work	1,498	1.14	..	..	..	..
Total in Labour Force	130,917	100.00	106,557	40,765	147,322	100.00
Not in Labour Force	219,423	..	80,833	143,280	224,113	..
Grand Total	350,340	..	187,390	184,045	371,435	..

(a) On wage or salary.

(b) Not on wage or salary.

(c) In 1961, total of those 'Unable to Secure Employment'; in 1966, total of 'Unemployed'.
See the previous text for changes in classification.

The following table shows the status of persons not in the labour force in the 1961 and 1966 Censuses:

Occupational Status: Analysis of Those not in the Labour Force

Occupational Status	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Proportion of those not in Labour Force			Total	Proportion of those not in Labour Force
Not in Labour Force—		per cent				per cent
Child not at School	45,447	20.71	22,544	21,474	44,018	19.64
Child Attending School or Full-time Student	79,114	36.06	44,325	42,103	86,428	38.56
Mainly Dependent on Pension or Superannuation	22,230	10.13	9,310	13,551	22,861	10.20
Independent Means	3,390	1.54	1,287	1,541	2,828	1.26
Home Duties	65,619	29.91	..	61,113	61,113	27.27
Inmates of Institutions	2,349	1.07	1,248	1,594	2,842	1.27
Other	1,274	0.58	2,119	1,904	4,023	1.80
Total Not in Labour Force	219,423	100.00	80,833	143,280	224,113	100.00
Total in Labour Force	130,917	..	106,557	40,765	147,322	..
Grand Total	350,340	..	187,390	184,045	371,435	..

In the next table, the proportions of the population in the labour force in Tasmania and Australia at the respective Census dates are shown. It is obvious from the table that, for both males and females, the proportion of the population in the labour force in Tasmania is lower than the Australian average:

Tasmania and Australia: Proportions of Population in Labour Force (Per Cent)

Particulars	Census, 30 June 1961			Census, 30 June 1966		
	Males	Females	Persons	Males	Females	Persons
Total in Labour Force—						
Tasmania	57.02	17.15	37.37	56.86	22.15	39.66
Australia	59.59	20.38	40.21	58.83	25.02	42.05

Industry

The next table shows the main groups of industry in which the labour force of Tasmania was employed at 30 June 1966 compared with 1961.

Industry of Population

Industry Group	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Proportion of Labour Force			Total	Proportion of Labour Force
		per cent				per cent
Primary Production	17,157	13.11	15,054	2,161	17,215	11.69
Mining and Quarrying	3,631	2.77	3,245	128	3,373	2.29
Manufacturing	29,531	22.56	27,109	6,850	33,959	23.05
Electricity, Gas, Water and Sanitary Services (a)	3,165	2.42	3,743	258	4,001	2.72
Building and Construction	13,343	10.19	13,956	333	14,289	9.70
Transport and Storage	9,014	6.89	8,294	566	8,860	6.01
Communication	3,645	2.78	2,907	984	3,891	2.64
Finance and Property	3,726	2.85	2,846	1,720	4,566	3.10
Commerce	20,547	15.69	14,194	8,777	22,971	15.59
Public Authority (n.e.i.) and Defence Services	5,010	3.83	3,941	1,556	5,497	3.73
Community and Business Services (including Professional) (b) ..	13,023	9.95	6,933	10,555	17,488	11.87
Amusement, Hotels, Cafes, Personal Service, etc.	7,038	5.38	3,241	5,037	8,278	5.62
Other	2,087	1.59	1,094	1,840	2,934	1.99
Total in Labour Force	130,917	100.00	106,557	40,765	147,322	100.00
Persons not in Labour Force ..	219,423	..	80,833	143,280	224,113	..
Grand Total	350,340	..	187,390	184,045	371,435	..

(a) Production, supply and maintenance.

(b) Includes police, fire brigades, hospitals, medical and dental services, education, business services such as consultant engineering and surveying, accounting and auditing, industrial and trade associations, advertising, etc.

In the case of employees, the basis of classification is the industry of the employer; thus a carpenter employed by a mining company will appear under 'Mining and Quarrying', not under 'Building and Construction'. Employees in the government sector (Commonwealth, State, Semi-Government, and Local Government) are allocated to appropriate industry groupings, e.g. State railway workers to 'Transport'; employees not classified under any of the major industry groups in the above table appear under 'Public Authority n.e.i.'.

'Labour Force' should not be confused with wage and salary earners. A full discussion of this concept is included in Chapter 10.

Religion

Commencing with the Census of 1933, and in subsequent censuses, the collection forms carried a note reminding the public that there was no legal obligation to answer the question on religion. The proportions of the population (10.28 per cent in 1961 and 9.78 per cent in 1966) not answering the question appear in the associated table as 'No Reply'.

The following table analyses the Tasmanian population according to religion reported at the Censuses of 1961 and 1966.

Religions of the Population

Religion	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Pro-portion of Total			Total	Pro-portion of Total
		per cent				per cent
Christian—						
Baptist	7,227	2.06	3,719	4,040	7,759	2.09
Brethren	2,008	0.57	1,508	1,554	3,062	0.82
Catholic (a)	63,993	18.27	36,058	35,031	71,089	19.14
Churches of Christ	2,507	0.72	1,328	1,373	2,701	0.73
Church of England	159,101	45.41	83,098	82,925	166,023	44.70
Congregational	4,193	1.20	2,145	2,385	4,530	1.22
Greek Orthodox	1,009	0.29	880	634	1,514	0.41
Lutheran	1,555	0.44	922	820	1,742	0.47
Methodist	42,236	12.06	20,994	22,090	43,084	11.60
Presbyterian	16,757	4.78	8,648	8,850	17,498	4.71
Protestant (Undefined)	1,975	0.56	1,288	1,373	2,661	0.72
Salvation Army	2,316	0.66	663	834	1,497	0.40
Seventh Day Adventist	1,567	0.45	980	944	1,924	0.52
Other (including Christian Un- defined)	5,090	1.45	2,584	2,659	5,243	1.41
Total Christian	311,534	88.92	164,815	165,512	330,327	88.93
Non-Christian—						
Hebrew	150	0.04	119	88	207	0.06
Other	118	0.04	199	79	278	0.07
Total Non-Christian	268	0.08	318	167	485	0.13
Indefinite	1,766	0.50	1,212	1,063	2,275	0.61
No Religion	775	0.22	1,345	675	2,020	0.54
No Reply	35,997	10.28	19,700	16,628	36,328	9.78
Grand Total	350,340	100.00	187,390	184,045	371,435	100.00

(a) Includes Catholic and Roman Catholic. (The Census forms do not list religions and followers of the one religion may describe it under different titles.)

VITAL STATISTICS

Historical

In 1839, John Montagu, Colonial Secretary of Van Diemen's Land, submitted to the Governor, Sir John Franklin, a series of statistical returns; below is shown part of Return No. 17:

Vital Statistics of Van Diemen's Land

Year					Births	Deaths	Marriages
1824	..	..	..	..	177	132	75
1828	..	..	..	..	309	250	120
1829	..	..	..	..	301	260	166
1830	..	..	..	..	460	270	163
1831	..	..	..	..	422	282	114
1833	..	..	..	..	455	379	257
1834	..	..	..	..	714	557	370
1835	..	..	..	..	730	525	356
1836	..	..	..	..	684	443	496
1837	..	..	..	..	754	597	381
1838	..	..	..	..	717	403	331

The complete table covers the period 1824-1838 but entries for 1825, 1826, 1827 and 1832 read 'No Returns'. In a commentary for the Governor's guidance, Montagu wrote: 'I would also observe that the number of births and deaths are those only returned by ministers of the Church of England, and the former column refers to those only who have been christened, and although the number of deaths must be near the truth, yet the actual number of births has been very much under-stated'. Thus, even though the Tasmanian record of births, deaths and marriages covers a period of 140 years, these early figures cannot be accepted as being very reliable.

Registration Provisions

Franklin's Legislative Council had passed in 1838 *An Act for Registering Births, Deaths and Marriages in the Island of Van Diemen's Land and its Dependencies*. This provided for a Registrar in Hobart with subordinate Deputy Registrars in registration districts throughout the colony; they were to record births and deaths and report them to the Registrar. Ministers celebrating marriage were required to report direct to the Registrar; Deputy Registrars could also officiate and had certain licensing functions. As late as 1867, the Government Statistician complained that accurate death rates could not be compiled because Section 22 of the 1838 Act excluded the registration of the death of any prisoner of the Crown serving under an unexpired sentence of transportation. In 1868, he reported that the death rate could be accepted as correct since 'only one transported offender died during the year'. This would certainly suggest that *total* deaths for the island were not recorded for the years 1839 to 1866.

From 1857 to 1882, the Registrar of the Supreme Court was also Registrar of Births, Deaths and Marriages; from 1882 to 1919, the Government Statistician was the Registrar; from 1919, the Registrar-General's Department operated as a separate entity.

The Registrar-General

The principal Act under which the Registrar-General operates is the *Registration of Births and Deaths Act 1895* as amended which provides for District Registrars and the appointment of a Registrar-General to be responsible

for the maintenance of central registers; in essence, the regional approach of the 1838 Act is retained. The functions of the Registrar-General in relation to the registration of marriages were last defined in the *Marriage Act* 1942. However, in 1961, the Commonwealth Parliament passed the *Marriage Act* 1961. A few minor provisions (relating mainly to certain extensions of the application of the prohibited degrees) came into operation on the date the Act received the Royal Assent (6 May 1961) and the remainder of the Act came into operation on 1 September 1963. On this date, the Act superseded the marriage laws of all the States but did not affect the essential function of the Registrar-General in the central registration of marriages. (The Commonwealth's passage of a uniform marriage law for Australia was the sequel to negotiations with all States.)

At the Office of the Registrar-General, there is kept a collection of all registrations made since 1839, as well as church records for earlier periods.

Summary of Principal Statistics

The principal numbers and rates relating to vital statistics in Tasmania for recent years are given in the following table:

Summary of Vital Statistics

Year	Number of—				Rate per 1,000 of Mean Population			Infant Mortality Deaths Under One Year per 1,000 Live Births
	Marriages	Live Births	Deaths	Infant Deaths (a)	Marriages	Live Births	Deaths	
1959	2,567	8,625	2,780	202	7.52	25.26	8.14	23.4
1960	2,713	8,853	2,670	169	7.82	25.52	7.70	19.1
1961	2,677	8,982	2,789	151	7.57	25.40	7.89	16.8
1962	2,485	8,894	2,870	184	6.99	25.01	8.07	20.7
1963	2,579	8,530	2,818	153	7.15	23.66	7.82	17.9
1964	2,869	8,252	3,174	166	7.87	22.64	8.71	20.1
1965	2,888	7,535	3,043	125	7.85	20.48	8.27	16.6
1966	2,946	7,401	3,159	108	7.93	19.91	8.50	14.6
1967	3,213	7,547	3,228	130	8.53	20.04	8.57	17.2
1968	3,426	8,317	3,284	143	8.96	21.76	8.59	17.2
1969	3,532	8,445	3,309	139	9.09	21.73	8.51	16.5

(a) Deaths under one year; included also in total deaths.

Crude Rate Comparisons

The rates per 1,000 of mean population for births, deaths and marriages are referred to as *crude* rates. It will be seen, in regard to marriages, that not *all* the population is 'at risk', children and those already married being obvious excluded examples. Similarly, births are clearly events related to certain fertile age groups of women and not to the total population; births also are directly related to the number of married persons and to the age structure of the married proportion of the community. Finally, deaths have a definite relationship with the numbers of each sex and the age structure of the community. Crude rates are valid measures of comparison in the short term only.

Subject to this limitation, the following Tasmanian historical comparisons exist as from 1880:

1. Crude Marriage Rate: highest 10.51 (1946); lowest 5.50 (1895 and 1896).
2. Crude Birth Rate: highest 36.63 (1884); lowest 19.39 (1935).
3. Crude Death Rate: highest 17.41 (1883); lowest 7.70 (1960).

It is probably significant that 1946 was the year of rapid demobilisation after World War II and that a similar marriage trend was recorded for 1919 and 1920 after World War I. As to the minima for marriage and birth rates, the 1890s and 1930s were decades characterised by severe economic depression. The crude birth rate for 1966 (19.91 per 1,000 of mean population) is not far above the State's lowest figure recorded in the 20th century (i.e. 19.39 in 1935). There is, of course, no suggestion that 1966 was a year of economic depression and the popularly accepted theory attributes the low figure to deliberate family planning. However, other factors are operative, the principal being the age composition of the female population. Girls born in the immediate post-war period have now entered the ranks of those likely to marry and this has increased the number of potentially fertile women. The crude birth rate for 1969 was 21.73, the previous year's rate being 21.76.

The effect of the post-war increase in births on the number of potentially fertile women may be inferred from the following table:

Pre-War, War-Time and Post-War Female Births

Year	Female Births	Year	Female Births	Year	Female Births
Pre-War—		War-Time—		Post-War—	
1934	2,127	1940	2,425	1946	3,287
1935	2,211	1941	2,574	1947	3,517
1936	2,226	1942	2,612	1948	3,452
1937	2,359	1943	2,677	1949	3,532
1938	2,366	1944	2,503	1950 (a) ..	3,490
1939	2,409	1945	2,882	1951	3,553
				1952	3,790

(a) Survivors in 1971 are females aged 21 years.

Review of Infant Mortality

Infant mortality relates to the number of deaths *under one year* and the rate is expressed as the number of such deaths per 1,000 live births. It follows that comparisons over long periods of time are valid and not affected by the limitations attached to crude rates. In the following record of infant mortality, the drop in rates has been dramatic:

Infant Mortality Rate, Selected Years, from 1880

Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births
1880 ..	112.3	1920 ..	65.5	1960 ..	19.1
1890 ..	105.6	1930 ..	50.6	1966 ..	14.6
1900 ..	80.0	1940 ..	35.2	1968 ..	17.2
1910 ..	101.7	1950 ..	23.8	1969 ..	16.5

The peak year since 1880 was 1883 with a rate of 124.0. In the period 1880-1910, the annual infant mortality rate exceeded 100 on 14 occasions. By way of contrast, the rate in 1966 reached a *record minimum* of 14.6.

At the turn of the century, 20 to 25 per cent of all deaths were those of infants under one year. The rapid fall in infant mortality rates had a marked effect of the crude death rates as infant deaths are a component part of total deaths. Infant mortality has fallen largely due to advances in medical science enabling the control of disease and the development of techniques to reduce perinatal deaths as well as improvements in child care and nutrition.

Marriages

The following table summarises the number of marriages and the crude marriage rate since 1880:

Marriages and Crude Marriage Rates, Selected Years from 1880

Year	Marriages		Year	Marriages	
	Number	Crude Rates (a)		Number	Crude Rates (a)
1880 ..	840	7.39	1940 ..	2,476	10.27
1890 ..	954	6.66	1950 ..	2,422	9.18
1900 ..	1,332	7.72	1960 ..	2,713	7.82
1910 ..	1,493	7.82	1967 ..	3,213	8.53
1920 ..	1,999	9.50	1968 ..	3,426	8.96
1930 ..	1,450	6.56	1969 ..	3,532	9.10

(a) Number of marriages per 1,000 of mean population.

A feature of recent years has been the increase in the proportion of marriages which involve minors as shown in the following table:

Marriages of Minors

Year	Age in Years						Total Minors	
	15	16	17	18	19	20	Number	Percentage of all Marriages (a)

BRIDEGROOMS

1964 .. ..	..	..	8	79	142	254	483	16.84
1965 .. ..	..	..	5	131	176	249	561	19.43
1966 .. ..	..	..	3	103	239	241	586	19.89
1967 .. ..	..	1	3	107	220	329	660	20.54
1968 .. ..	..	..	8	120	215	317	660	19.26
1969 .. ..	..	..	5	130	214	309	658	18.63

BRIDES

1964	1	118	237	314	382	370	1,422	49.56
1965	3	105	253	370	401	382	1,514	52.42
1966	2	128	189	350	448	425	1,542	52.34
1967	2	102	232	354	444	516	1,650	51.35
1968	3	119	234	384	482	559	1,781	51.98
1969	2	96	236	396	521	517	1,768	50.06

(a) Includes marriages involving adults.

The next table analyses the ages of all bridegrooms and brides contracting marriages:

Age of Bridegrooms and Brides, 1969

Age (Years)	Bridegrooms		Brides	
	Number	Per Cent of Total	Number	Per Cent of Total
Under 20	349	9.88	1,251	35.42
20-24	2,013	56.98	1,700	48.14
25-29	666	18.86	260	7.36
30-34	186	5.27	82	2.32
35-39	67	1.90	53	1.50
40-44	80	2.26	58	1.64
45-49	59	1.67	44	1.24
50-54	37	1.05	34	0.96
55-59	30	0.85	25	0.71
60-64	20	0.57	14	0.40
65 and Over	25	0.71	11	0.31
Total	3,532	100.00	3,532	100.00

The following table gives the average age of brides and bridegrooms in recent years:

**Average Age of Bridegrooms and Brides
(Years)**

Particulars	1964	1965	1966	1967	1968	1969
Average Age of Bridegrooms—						
Bachelors	24.25	24.01	24.44	24.33	24.06	24.10
Widowers	57.44	55.40	57.55	56.29	58.07	54.85
Divorcees	42.02	40.60	40.87	41.70	40.73	40.47
All Bridegrooms	26.64	25.99	26.88	26.13	25.97	25.79
Average Age of Brides—						
Spinsters	21.09	21.05	21.50	21.39	21.36	21.36
Widows	51.39	49.86	51.59	48.57	50.47	48.23
Divorcees	38.14	36.83	38.84	36.42	37.35	37.27
All Brides	23.30	22.82	23.84	23.14	23.12	23.03

In the next table, the conjugal condition of persons marrying is shown for a six-year period:

Conjugal Condition of Persons Marrying

Year	Bridegrooms			Brides			Total Marriages
	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced	
1964 ..	2,581	112	176	2,592	122	155	2,869
1965 ..	2,638	106	144	2,643	96	149	2,888
1966 ..	2,636	125	185	2,634	117	195	2,946
1967 ..	2,952	85	176	2,930	114	169	3,213
1968 ..	3,138	99	189	3,126	118	182	3,426
1969 ..	3,252	96	184	3,234	103	195	3,532

The numbers of marriages performed according to the rites of the principal religious denominations and of civil marriages contracted before Registrars are shown for recent years. Slightly more than eleven per cent of all marriages since 1964 have been civil marriages contracted before Registrars.

Marriages, Religious and Civil

Particulars of Celebration	1964	1965	1966	1967	1968	1969
Religious Rites—						
Church of England	1,108	1,089	1,097	1,299	1,433	1,483
Catholic	605	641	652	690	732	759
Presbyterian	138	143	141	147	144	148
Methodist	377	381	416	434	417	444
Congregational	31	49	47	44	39	52
Baptist	75	98	79	83	91	90
Churches of Christ	25	21	19	20	16	25
Salvation Army	21	20	17	19	32	25
Seventh Day Adventist ..	6	3	11	9	14	12
Other	71	86	92	83	83	80
Civil Ceremonies (a)	412	357	375	385	425	414
Total	2,869	2,888	2,946	3,213	3,426	3,532

(a) Marriages contracted before Registrars.

Divorce

Divorce in Tasmania was previously provided for under the *Matrimonial Causes Act* 1860 as amended in 1864, 1874 and 1959. However, as from 1 February 1961, Australia came under a uniform divorce law, the new *Matrimonial Causes Act* 1959 of the Commonwealth Parliament having come into effect on that date. (Like the uniform marriage law, the Commonwealth legislation relating to divorce was the sequel to negotiations with the States.)

In 1969, dissolutions of marriage represented 9.37 per cent of the number of marriages contracted for that year (331 dissolutions against 3,532 marriages). The increase in the number of annual dissolutions is shown in the historical table which follows:

Dissolutions of Marriage Granted, (a) Summary from 1881

Decade Ending—	Maximum in Decade		Minimum in Decade	
	Year	Number	Year	Number
1890	1886	6	1884	..
1900	1894	6	1896	3
1910	1909	13	1904	2
1920	1920	18	1916	2
1930	1928	55	1924	20
1940	1938	109	1937	30
1950	1949	266	1942	83
1960	1954	233	1958	176
1969 (b)	1966	319	1964	230

(a) Includes nullities of marriage and judicial separations.

(b) Incomplete decade.

The following table gives the number of petitions filed by husbands and wives respectively, and the number of dissolutions of marriage during the last six years. Every decree of dissolution of marriage is, in the first instance, a decree *nisi* and is not made absolute till the expiration of not less than three months thereafter.

Petitions Filed and Dissolutions Granted

Particulars	1964	1965	1966	1967	1968	1969
Petitions for Dissolution (a) Filed By—						
Husband	149	146	156	151	198	202
Wife	175	185	201	169	210	227
Total Petitions ..	324	331	357	320	408	429
Dissolutions (a) Granted on Petition of—						
Husband	116	131	142	96	154	159
Wife	114	149	177	152	149	172
Total Dissolutions ..	230	280	319	248	303	331

(a) Includes nullities of marriage and judicial separations.

The next table deals with petitions filed:

Petitions Filed, 1969

Petition For	Petitioner		Total
	Husband	Wife	
Dissolution	202	225	427
Nullity .. ..	..	1	1
Judicial Separation ..	..	1	1
Total	202	227	429

The table that follows analyses the grounds on which dissolutions were granted:

Dissolutions (a) Granted According to Grounds, 1969

Grounds	Petitioner		Total
	Husband	Wife	
Single Ground—			
Desertion	74	70	144
Adultery	61	43	104
Separation	17	38	55
Cruelty .. ..	..	10	10
Drunkenness .. ..	..	3	3
Other	1	1	2
Dual Grounds—			
Desertion and Adultery	3	2	5
Desertion and Separation	2	1	3
Cruelty and Drunkenness	..	1	1
Other	1	1	2
Three Grounds or More ..	..	2	2
Total	159	172	331

(a) Includes nullities of marriage and judicial separations.

The more frequent grounds for the granting of dissolutions are:

Dissolutions (a) Granted According to Principal Grounds

Grounds	1964	1965	1966	1967	1968	1969
On Petition of Husband—						
Adultery	37	30	33	18	49	61
Desertion	48	61	69	44	59	74
Separation	20	27	27	24	32	17
Other	11	13	13	10	14	7
On Petition of Wife—						
Adultery	17	27	25	23	36	43
Desertion	47	58	72	65	54	70
Separation	25	41	47	38	37	38
Other	25	23	33	26	22	21
Total	230	280	319	248	303	331

(a) Includes nullities and judicial separations.

An analysis is made of the ages of the parties:

Dissolutions of Marriage 1969 (a)—Ages of Parties at time of Dissolution

Age of Husband (Years)	Age of Wife (Years)						Total Husbands
	Under 21	21-29	30-39	40-49	50-59	60 and over	
Under 21 .. .. .	..	..	..	..	..	..	..
21-29	3	68	4	..	..	..	75
30-39 .. .. .	..	51	59	5	1	..	116
40-49 .. .. .	..	4	33	44	3	..	84
50-59 .. .. .	..	..	5	18	21	2	46
60 and Over .. .. .	..	..	..	1	5	4	10
Total Wives ..	3	123	101	68	30	6	331

(a) Includes nullities of marriage and judicial separations.

The duration of marriage and issue are analysed below:

Dissolutions of Marriage, 1969 (a)—Duration of Marriage and Issue

Duration of Marriage (Years)	Dissolutions of Marriages with—						Total Marriages Dissolved	Total Number of Children (b)
	No Children	1 Child	2 Children	3 Children	4 Children	5 or more Children		
0- 4 ..	20	14	3	..	..	..	37	20
5- 9 ..	26	36	27	9	1	..	99	121
10-14 ..	8	13	16	16	7	6	66	152
15-19 ..	4	3	14	11	8	3	43	111
20-24 ..	10	9	9	9	5	4	46	98
25-29 ..	16	6	3	1	1	..	27	19
30-34 ..	6	2	1	..	..	..	9	4
35-39 ..	1	1	..	..	..	..	2	1
40-44 ..	1	..	..	..	..	..	1	..
45 and Over	1	..	..	..	..	..	1	..
Total Dissolutions	93	84	73	46	22	13	331	..
Total Children (b) ..	..	84	146	138	88	70	..	526

(a) Includes nullities of marriage and judicial separations.

(b) Under 21 years of age.

Births

The following table summarises births and crude birth rates from 1880:

Number of Births and Crude Birth Rates, Selected Years from 1880

Year	Births		Year	Births	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	3,739	32.90	1930 ..	4,785	21.66
1885 ..	4,637	36.29	1935 ..	4,456	19.39
1890 ..	4,813	33.60	1940 ..	4,994	20.71
1895 ..	4,790	31.16	1945 ..	5,785	23.27
1900 ..	4,864	28.18	1950 ..	7,242	25.96
1905 ..	5,257	28.50	1955 ..	8,089	25.63
1910 ..	5,586	29.25	1960 ..	8,853	25.52
1915 ..	5,845	29.78	1965 ..	7,535	20.48
1920 ..	5,740	27.29	1968 ..	8,317	21.76
1925 ..	5,218	24.21	1969 ..	8,445	21.73

The next table shows, for a six-year period, the number of births and the age groups of the mothers:

Number of Births Classified According to Age of Mother, and Crude Birth Rates

Age Group of Mothers (Years)	1964	1965	1966	1967	1968	1969
10-14	2	6	1	6	7	1
15-19	1,073	1,074	1,113	1,091	1,163	1,201
20-24	2,834	2,632	2,586	2,749	3,206	3,259
25-29	2,190	2,039	2,000	2,064	2,272	2,346
30-34	1,196	1,016	980	997	1,033	1,037
35-39	704	572	541	471	468	464
40-44	231	186	168	159	160	125
45 and Over ..	22	10	12	10	8	12
Total ..	8,252	7,535	7,401	7,547	8,317	8,445
Crude Birth Rate (a)	22.64	20.48	19.91	20.04	21.76	21.73

(a) Births per 1,000 of mean population.

One common observation is that births of males, in total, usually exceed those of females. The next table shows births by sex and indicates masculinity:

Births by Sex and Masculinity

Particulars	1964	1965	1966	1967	1968	1969
Births of—						
Males	4,218	3,876	3,753	3,870	4,288	4,337
Females	4,034	3,659	3,648	3,677	4,029	4,108
Total ..	8,252	7,535	7,401	7,547	8,317	8,445
Masculinity (a) ..	104.56	105.93	102.88	105.25	106.43	105.57

(a) Number of male births per 100 female births.

In the following table, births are analysed by sex and by the age of the mother and classified as nuptial or ex-nuptial:

Births by Sex, Age of Mother and Nuptial State, 1969

Age Group of Mothers (Years)	Nuptial		Ex-Nuptial		All Births		
	Male	Female	Male	Female	Male	Female	Total
10-14 .. .. .	..	..	..	1	..	1	1
15-19	453	447	163	138	616	585	1,201
20-24	1,576	1,500	95	88	1,671	1,588	3,259
25-29	1,180	1,087	40	39	1,220	1,126	2,346
30-34	492	501	21	23	513	524	1,037
35-39	231	204	15	14	246	218	464
40-44	58	57	5	5	63	62	125
45 and Over	8	4	..	..	8	4	12
Total	3,998	3,800	339	308	4,337	4,108	8,445

The table that follows summarises, for a six-year period, births according to whether the child was first-born or the issue of a subsequent birth:

Births of First Born and Subsequent Births; Nuptial State of Mothers

Classification of Births	1964	1965	1966	1967	1968	1969
Nuptial—						
First Born (a) ..	2,296	2,211	2,234	2,337	2,721	} 7,798
Subsequent Birth ..	5,454	4,853	4,643	4,648	4,939	
Ex-Nuptial ..	502	471	524	562	657	
Total	8,252	7,535	7,401	7,547	8,317	8,445
Ex-Nuptial Births as Percentage of Total Births	6.1	6.3	7.1	7.4	7.9	7.7

(a) In case of multiple births with no previous issue, first child born alive is recorded as 'First Born' and subsequent child or children as 'Subsequent Birth'.

It should be noted that 'First Born' in the previous tables refers specifically to the union from which the child originates; thus a mother married for the second time could be credited with a 'First Born' child despite issue from the previous union.

Birth Rates

The *crude birth rate* is expressed as the number of births per 1,000 of mean population; this is obviously an unsatisfactory measure since births are events strictly related to the number of women in the fertile age groups. A more satisfactory index is the *fertility rate*, expressed as the number of births per 1,000 women aged 15-44 years. However, there are profound differences between the relative fertility of various age groups and a further refinement is the calculation of *age-specific birth rates*. The following table shows age-specific birth rates, the fertility rate, and crude birth rate for a six-year period.

Birth and Fertility Rates

Particulars	1964	1965	1966	1967	1968	1969
AGE SPECIFIC BIRTH RATES (a)						
Age Group of Mother (Years)—						
10-14	0.1	0.3	0.1	0.3	0.4	0.1
15-19	64.6	62.9	64.7	62.9	65.8	66.7
20-24	233.8	209.9	203.6	199.9	217.7	210.1
25-29	207.2	193.1	176.9	180.1	196.4	196.3
30-34	114.9	102.6	95.9	95.5	96.8	95.1
35-39	63.5	52.6	49.3	43.6	44.0	43.9
40-44	20.1	16.1	14.6	14.0	14.2	11.2
45-49	2.2	1.0	1.2	0.9	0.7	1.1
FERTILITY RATE (b)						
Fertility Rate (b) ..	114	104	100	100	r 109	108
CRUDE BIRTH RATE (c)						
Crude Birth Rate (c)	22.6	20.5	19.9	20.0	21.8	21.7

(a) Number of births per 1,000 women in age groups shown.

(b) Number of births per 1,000 women aged 15-44 years.

(c) Number of births per 1,000 of mean population.

From the data in the table, it is apparent that the two principal factors determining the number of births in any year are:

- (i) the age distribution of women within the fertile age groups;
- (ii) the relative fertility of women in each age group (as indicated by age-specific birth rates).

Infant Mortality

Infant mortality relates to children dying within one year of birth. The table that follows analyses such deaths in further detail and shows that the greatest mortality rate is associated with infants in their first day of life. To obtain a correct picture of relative risk, it should be noted that deaths in the 'one day and under one week' class are spread over 6 days; in the 'one week and under four weeks' class spread over 21 days; and in the final class, spread over 337 days.

Infant Mortality—Number of Deaths and Mortality Rates at Specific Ages

Year	Infant Deaths		Mortality Rate (a) at Age Specified—			
	Number	Per 1,000 Live Births	Under 1 Day	1 Day and under 1 Week	1 Week and under 4 Wks	4 Weeks and under 12 Mths
1964 ..	166	20.1	6	7	1	6
1965 ..	125	16.6	6	4	1	6
1966 ..	108	14.6	5	4	1	4
1967 ..	130	17.2	5	5	1	6
1968 ..	143	17.2	6	4	1	6
1969 ..	139	16.5	5	4	2	6

(a) Infant deaths per 1,000 live births; rates have been rounded to whole numbers.

Infant Mortality (a)—Tasmania-Australia Comparison

State/Country	1964	1965	1966	1967	1968	1969
Tasmania	20.1	16.6	14.6	17.2	17.2	16.5
Australia	19.1	18.5	18.2	18.3	17.8	17.9

(a) Infant deaths per 1,000 live births.

To put current infant mortality rates in their true perspective, it is necessary to refer to rates prevailing at the turn of the century when 100 infant deaths per 1,000 live births was not an uncommon experience. This is discussed in an earlier section headed 'Crude Rate Comparisons'.

Causes of Infant Deaths

The next table shows the causes of infant deaths during the six years, 1962 to 1967, with specification of groups of items and single items:

Infant Mortality—Causes of Death Under One Year

Cause	1962	1963	1964	1965	1966	1967
057 Meningococcal Infections .. ..	..	..	..	..	1	..
001-056 } Other General Diseases (a)	2	4	2	2	1	5
058-326 }						
340 Meningitis	2	..	2	1	..	4
330-334 } Other Diseases of the Nervous System	1	1	2	1	1	1
341-398 }						
400-468 Diseases of the Circulatory System ..	..	1	..	..	..	..
470-475 Acute Upper Respiratory Infections ..	..	..	..	..	..	1
480-483 Influenza .. ..	..	..	1	..	..	..
490-493 Pneumonia	22	22	18	15	13	17
500-502 Bronchitis	1	1	1	1	1	1
510-527 Other Diseases, Respiratory System	7	3	6	8	2	4
571 Gastro-Enteritis	2	3	3	2	2	..
530-570 } Other Diseases of the Digestive System	3	3	4	3	3	1
572-587 }						
590-594 Nephritis and Nephrosis .. ..	..	..	..	..	..	..
600-637 Other Diseases of the Genito-Urinary System ..	1	1	1	..	..	1
690-716 Diseases of the Skin .. ..	..	1	..	..	..	..
720-749 Diseases of the Bones and Organs of Movement .. ..	..	..	..	..	..	..
750-759 Congenital Malformations	50	35	28	27	14	19
760-769 Birth Injuries, Asphyxia and Infections of the New-Born	44	34	51	37	26	38
770-776 Other Diseases of Early Infancy	44	38	40	24	37	35
780-795 Ill-Defined Conditions .. ..	..	..	..	..	..	..
800-999 External Causes	5	6	7	4	7	3
Total	184	153	166	125	108	130

(a) Principally infective and parasitic diseases.

All death statistics prior to 1968, including those relating to infant mortality, have been compiled in accordance with the Seventh Revision (1955) of the International Classification of Diseases (World Health Organisation).

The following table has been compiled on the basis of the Eighth Revision (1965) of the International Classification of Diseases (World Health Organisation) and is not fully comparable with the table above.

Infant Mortality—Causes of Death Under One Year

Cause		1968	1969
009	Diarrhoeal Diseases	4	3
036	Meningococcal Infection	1	..
000-008	Other General Diseases (a)	3	..
010-035			
037-315			
320			
321-389	Other Diseases of the Nervous System and Sense Organs ..	1	..
390-458	Diseases of the Circulatory System	3	1
460-466	Acute Respiratory Infections (except Influenza)	3	5
470-474	Influenza	3	..
480-486	Pneumonia	28	39
490-493	Bronchitis, Emphysema and Asthma .. .. .	..	..
500-519	Other Diseases of Respiratory System .. .. .	..	..
520-577	Diseases of the Digestive System .. .. .	..	2
580-629	Diseases of Genito-Urinary System .. .. .	..	..
680-709	Diseases of Skin and Subcutaneous Tissue .. .. .	..	..
710-738	Diseases of Musculoskeletal System and Connective Tissue ..	1	..
740-759	Congenital Anomalies	23	20
760-763	Certain Maternal Conditions	10	3
764-768	Birth Injury, Difficult Labour and Other Anoxic and Hypoxic Conditions	23	22
772, 776			
769-771			
773-775			
777-779	Other Causes of Perinatal Mortality	36	37
780-796	Symptoms and Ill-Defined Conditions	1	..
800-999	Accidents, Poisonings and Violence	2	7
Total		143	139

(a) Principally infective and parasitic diseases.

Deaths

The following table summarises the number of deaths and crude death rates from 1880 to 1969. The table indicates a continual fall, apart from minor variations from a death rate of 16.12 (1880) to 8.52 (1969).

Number of Deaths and Crude Death Rates, Selected Years from 1880

Year	Deaths		Year	Deaths	
	Number	Rate (a)		Number	Rate (a)
1880 ..	1,832	16.12	1930 ..	1,948	8.82
1885 ..	2,036	15.94	1935 ..	2,353	10.24
1890 ..	2,118	14.79	1940 ..	2,387	9.90
1895 ..	1,811	11.78	1945 ..	2,413	9.71
1900 ..	1,903	11.02	1950 ..	2,466	8.85
1905 ..	1,844	10.00	1955 ..	2,489	7.89
1910 ..	2,120	11.10	1960 ..	2,670	7.70
1915 ..	2,015	10.27	1965 ..	3,043	8.27
1920 ..	2,036	9.68	1968 ..	3,284	8.59
1925 ..	1,996	9.26	1969 ..	3,309	8.52

(a) Per 1,000 of mean population.

A marked difference exists between male and female crude death rates:

Male and Female Deaths and Crude Rates

Year	Number of Deaths			Deaths Per 1,000 of Mean Population			Ratio of Male to Female Crude Death Rates
	Males	Females	Persons	Males	Females	Persons	
1959	1,553	1,227	2,780	8.97	7.29	8.14	1.230
1960	1,546	1,124	2,670	8.79	6.57	7.70	1.338
1961	1,601	1,188	2,789	8.96	6.79	7.89	1.320
1962	1,622	1,248	2,870	9.01	7.10	8.07	1.269
1963	1,601	1,217	2,818	8.75	6.83	7.82	1.281
1964	1,797	1,377	3,174	9.76	7.64	8.71	1.277
1965	1,716	1,327	3,043	9.24	7.29	8.27	1.267
1966	1,726	1,433	3,159	9.21	7.79	8.50	1.182
1967	1,790	1,438	3,228	9.42	7.71	8.57	1.222
1968	1,906	1,378	3,284	9.89	7.27	8.59	1.360
1969	1,876	1,433	3,309	9.57	7.44	8.51	1.286

In the following tables the number of deaths and the crude death rates for Tasmania are compared with those of the other States.

Australian States—Number of Deaths (a)

Year	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australia (b)
1965 ..	38,949	28,031	14,114	8,788	6,274	3,043	99,715
1966 ..	40,546	28,673	14,861	9,323	6,772	3,159	103,929
1967 ..	39,613	28,373	14,736	9,071	6,779	3,228	102,703
1968 ..	41,803	29,967	16,078	9,916	7,468	3,284	109,547
1969 ..	40,665	28,976	15,786	9,337	7,350	3,309	106,496

(a) Includes deaths of Aborigines from 1967.

(b) Includes A.C.T. and N.T.

Australian States—Crude Death Rates, Census Years (a)

State	1921	1933	1947	1954	1961	1966	1969 (b)
N.S.W. ..	9.50	8.58	9.53	9.46	8.95	9.58	9.08
Victoria ..	10.52	9.59	10.44	9.20	8.37	8.91	8.55
Queensland ..	9.37	8.83	9.15	8.64	8.42	8.94	8.92
S.A. ..	10.02	8.44	9.62	9.02	8.06	8.55	8.15
W.A. ..	10.42	8.64	9.39	8.38	7.77	8.10	7.76
Tasmania ..	10.30	9.60	9.17	8.67	7.89	8.50	8.51
Australia (c) ..	9.91	8.92	9.69	9.10	8.47	9.00	8.61

(a) Deaths per 1,000 of mean population.

(b) Non-Census year. Aboriginal deaths included (repeal of Section 127 of Constitution).

(c) Includes A.C.T. and N.T.

Death Rates for Specific Age Groups

Previously in this chapter, crude death rates were described as unsuitable for comparisons over long periods of time due to changes in the age structure of the community. In the following table, this difficulty is overcome by calculating death rates for specific age groups. The method employed is to obtain the average annual deaths for specific age groups over those three-year periods which are broken into equal parts by a census of population (e.g. 30 June 1947 is the census date for a calculation of rates in the three years, 1946-1948 inclusive). Rates can then be calculated by comparing the average number of deaths for each group with the number of persons in each group as revealed by the census. In theory, the calculation of such rates need not be restricted to periods for which a census date forms the midpoint but the advantage of accepting such restriction lies in the accuracy of the age distribution obtained from the census. In the table, three-year periods have been selected appropriate to the censuses of 1947 and 1966 (the data relate to the Tasmanian population):

Death Rates for Specific Age Groups (a)

Age Group (Years)	Males		Females		Persons	
	1946-48	1965-67	1946-48	1965-67	1946-48	1965-67
0-4	9.13	4.08	7.24	3.47	8.21	3.78
5-9	1.15	0.47	0.69	0.39	0.92	0.43
10-14	0.67	0.61	0.39	0.39	0.53	0.50
15-19	1.62	1.73	1.46	0.56	1.54	1.15
20-24	2.10	1.98	1.79	0.68	1.94	1.34
25-29	2.12	1.50	1.74	0.71	1.93	1.11
30-34	2.27	2.07	1.90	1.08	2.09	1.59
35-39	3.10	2.03	2.59	1.34	2.85	1.70
40-44	3.93	3.64	3.51	2.66	3.73	3.16
45-49	5.88	6.32	4.66	3.65	5.28	5.00
50-54	9.52	9.53	7.84	4.81	8.65	7.23
55-59	16.98	16.78	10.03	8.54	13.44	12.79
60-64	23.87	27.85	17.30	13.77	20.53	20.84
65-69	41.82	42.24	27.35	23.15	34.56	31.90
70-74	58.43	69.39	49.47	38.48	53.80	51.29
75-79	103.22	91.37	77.00	68.82	89.78	78.10
80-84	156.64	145.21	123.49	113.78	138.41	126.26
85 and over ..	292.36	235.85	220.32	213.56	250.16	221.83

(a) Rate per 1,000 of the population in the specified age group at census date.

A later section of this chapter is headed 'Expectation of Life Tables'. The theory of constructing life tables can be related to the table above, the major difference being that the former depend on the calculation of differential rates for each year, and not for five-year age groups.

A more comprehensive analysis of the theory of life tables has been published in earlier year books.

Causes of Death

The Eighth (1965) Revision of the International Classification of Diseases was adopted for use in 1968 but has not materially affected comparability with the Sixth Revision (1948). The following table shows causes of deaths, the rates per 100,000 of mean population and the proportion of deaths from each cause.

Causes of Death: Numbers and Rates, 1969

Cause of Death	Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
0-4 (a)	(a)	5	1	0.2
5. Tuberculosis of respiratory system	010-012	3	1	0.1
6. Other tuberculosis including late effects ..	013-019	3	1	0.1
7-16 (b)	(b)	1	..	..
17. Syphilis and its sequelae	090-097	1	..	..
18. All other infective and parasitic diseases ..	(c)	5	1	0.2
19. Malignant neoplasms—				
Digestive organs and peritoneum	150-159	197	50	5.9
Trachea, bronchus and lung	162	90	23	2.7
Breast	174	38	10	1.2
Genito-Urinary organs	180-189	85	22	2.6
Leukaemia	204-207	14	4	0.4
Other malignant and lymphatic neoplasms	(d)	86	22	2.6
20. Benign and unspecified neoplasms	210-239	7	2	0.2
21. Diabetes mellitus	250	42	11	1.3
22. Nutritional deficiencies	260-269	3	1	0.1
23. Anaemias	280-285	7	2	0.2
24. Meningitis	320	1	..	..
25. Active rheumatic fever	390-392	1	..	..
26. Chronic rheumatic heart disease	393-398	23	6	0.7
27. Hypertensive disease	400-404	50	13	1.5
28. Ischaemic heart disease	410-414	942	243	28.6
29. Other forms of heart disease	420-429	168	43	5.1
30. Cerebro-vascular disease	430-439	430	111	13.1
31. Influenza	470-474	8	2	0.2
32. Pneumonia	480-486	139	36	4.2
33. Bronchitis, emphysema and asthma	490-493	146	38	4.4
34. Peptic ulcer	531-533	20	5	0.6
35. Appendicitis	540-543	1	..	..
36. Intestinal obstruction and hernia	{ 550-553	6	1	0.2
	560	4	1	0.1
37. Cirrhosis of liver	571	14	4	0.4
38. Nephritis and Nephrosis	580-584	22	6	0.7
39. Hyperplasia of prostate	600	8	2	0.2
40. Abortion	640-645	..	..	..
41. { Other complications of pregnancy, child-	630-639	..	..	..
birth and the puerperium. Delivery without				
mention of complication	650-678	1	..	..
42. Congenital anomalies	740-759	29	7	0.9
43. { Birth injury, difficult labour and other anoxic	{ 764-768	7	2	0.2
and hypoxic conditions	772,776	17	4	0.5
	760-763	3	1	0.1
44. Other causes of perinatal mortality	{ 769-771	24	6	0.7
	773-775	4	1	0.1
	777-779	9	2	0.3
45. Symptoms and other ill-defined conditions..	780-796	11	3	0.3
46. All other diseases	Remainder of 240-738	311	80	9.4
EXTERNAL CAUSE OF INJURY				
47. Motor vehicle accidents	810-823	139	36	4.2
48. All other accidents	{ 800-807	1	..	..
	825-949	119	30	3.6
49. Suicide and self-inflicted injuries	950-959	51	13	1.5
50. All other external causes	960-999	14	4	0.4
All Causes .. .. .	..	3,310	851	100.00

(a) 000-009.

(b) 020, 032, 033, 034, 036, 040-043, 050, 055, 080-084.

(c) 021-027, 030, 031, 035, 037, 038, 039, 044-046, 051-054, 056, 057, 060-068, 070-079, 085-089, 098-117, 120-136.

(d) 140-149, 160, 161, 163, 170-173, 190-203, 208, 209.

It will be noted that Items 0-4 and 7-16 in the table were not listed individually, few associated deaths having been recorded. The specification of causes reads: (1) Cholera; (2) Typhoid fever; (3) Dysentery, all forms; (4) Enteritis and other diarrhoeal diseases; (7) Plague; (8) Diphtheria; (9) Whooping Cough; (10) Streptococcal sore throat and Scarlet Fever; (11) Meningococcal infection; (12) Acute poliomyelitis; (13) Smallpox; (14) Measles; (15) Typhus and other rickettsial diseases; (16) Malaria. Uncertainty as to diagnosis in earlier periods makes comparison difficult but, at the turn of the century, Whooping Cough, Diphtheria, Typhoid Fever and Scarlet Fever were diseases associated with numerous deaths.

Causes of Death in Age Groups

The previous table showing causes of death makes no reference to age, a complete dissection by age and cause being beyond the scope of a year book. Nevertheless, there is an extremely significant relationship between age and cause of death and the next table indicates, in summary form, their close inter-connection.

For each of the specified causes in the table, two percentages are shown:

- (i) Deaths in a particular age group as a proportion of total deaths from all causes in that age group.
- (ii) Deaths in a particular age group as a proportion of total deaths from the same cause at all ages.

The causes chosen and specified are such that they account, in total, for approximately 75 per cent or more of deaths in most of the given age groups.

Attention is called to 'Accidental and Violent Deaths' (800-999) which account for over 50 per cent of deaths in the age groups from 5-14 years to 25-34 years inclusive. Also noteworthy is the present relative unimportance of 'Infective and Parasitic Diseases' (001-136). The most important group, in a total sense, is 'Diseases of the Heart' (390-398, 400-404, 410-429) followed by 'Malignant Neoplasms—All Forms' (140-209); then 'Cerebrovascular diseases' (430-438) followed by 'Pneumonia, Bronchitis and Influenza' (470-474, 480-486, 490-493); nevertheless, the inter-connection between age and cause of death is so close that none of these causes needs to be specified for some age groups in the table.

Main Causes of Death (in Age Groups), 1969

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
	Under 1 year:	139	100.0	..	..
760-763	Maternal conditions	3	2.1	3	100.0
740-759	Congenital anomalies	20	14.4	29	69.0
769	Multiple birth	9	6.5	9	100.0
776	Anoxic and hypoxic conditions ..	11	7.9	11	100.0
480-486	Pneumonia	39	28.1	139	28.1
..	Other causes	57	41.0	..	..
	1-4 years:	27	100.0	..	..
800-999	Accidental and violent deaths ..	14	51.9	324	4.3
740-759	Congenital anomalies	5	18.5	29	17.2
140-209	Cancer (all forms) (b)	2	7.4	510	0.4
480-486	Pneumonia .. ..	..	..	139	..
490-493	Bronchitis, emphysema, asthma ..	..	..	146	..
..	Other causes	6	22.2	..	..

Main Causes of Death (in Age Groups), 1969—continued

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
800-999	5-14 years:	38	100.0	..	..
140-209	Accidental and violent deaths ..	24	63.2	324	7.4
480-486	Cancer (all forms) (b)	5	13.2	510	1.0
490-493	Pneumonia	1	2.6	139	0.7
..	Bronchitis, emphysema, asthma ..	1	2.6	146	0.7
..	Other causes	7	18.4	..	..
800-999	15-19 years:	41	100.0	..	..
140-209	Accidental and violent deaths ..	32	78.0	324	9.9
..	Cancer (all forms) (b)	10	2.4	510	0.2
..	Other causes	8	19.6	..	..
800-999	20-24 years:	44	100.0	..	..
140-209	Accidental and violent deaths ..	36	81.8	324	11.1
..	Cancer (all forms) (b)	5	11.4	510	1.0
..	Other causes	3	6.8	..	..
800-999	25-34 years:	69	100.0	..	..
140-209	Accidental and violent deaths ..	41	59.4	324	12.7
390-398	Cancer (all forms) (b)	10	14.5	510	2.0
400-404, 410-429	Diseases of heart	6	8.7	1,185	0.51
..	Other causes	12	17.4	..	..
800-999	35-44 years:	119	100.0	..	..
140-209	Accidental and violent deaths ..	37	31.1	324	11.4
390-398, 400-404, 410-429	Cancer (all forms) (b)	20	16.8	510	3.9
480-486	Diseases of heart	29	24.4	1,185	2.4
490-493	Pneumonia	4	3.3	139	2.9
..	Bronchitis, emphysema, asthma ..	2	1.7	146	1.4
..	Other causes	27	22.7	..	..
390-398, 400-404, 410-429	45-54 years:	278	100.0	..	..
140-209	Diseases of heart	92	33.1	1,185	7.8
800-999	Cancer (all forms) (b)	59	21.2	510	11.6
430-438	Accidental and violent deaths ..	40	14.4	324	12.3
480-486	Cerebrovascular diseases ..	33	11.9	430	7.7
490-493	Pneumonia	3	1.1	139	2.2
..	Bronchitis, emphysema, asthma ..	9	3.2	146	6.2
..	Other causes	42	15.1	..	..
390-398, 400-404, 410-429	55-64 years:	498	100.0	..	..
140-209	Diseases of heart	218	43.8	1,185	18.4
430-438	Cancer (all forms) (b)	119	23.9	510	23.3
800-999	Cerebrovascular diseases ..	40	8.0	430	9.3
480-486	Accidental and violent deaths ..	33	6.6	324	10.2
490-493	Pneumonia	7	1.4	139	5.0
..	Bronchitis, emphysema, asthma ..	26	5.2	146	17.8
..	Other causes	55	11.0	..	..

Main Causes of Death (in Age Groups), 1969—continued

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
390-398	65-74 years:	754	100.0	..	..
400-404, 410-429	Diseases of heart	337	44.6	1,185	28.4
140-209	Cancer (all forms) (b)	140	18.6	510	27.5
430-438	Cerebrovascular diseases	99	13.1	430	23.0
480-486	Pneumonia	17	2.3	139	12.2
490-493	Bronchitis, emphysema, asthma	40	5.3	146	27.4
800-999	Accidental and violent deaths	21	2.8	324	6.5
..	Other causes	100	13.3	..	..
390-398, 400-404, 410-429	75 years and over:	1,302	100.0	..	..
430-438	Diseases of heart	501	38.5	1,185	42.3
140-209	Cerebrovascular diseases	251	19.3	430	58.4
440-448	Cancer (all forms) (b)	149	11.4	510	29.2
480-486	Diseases of arteries	83	6.4	116	71.6
490-493	Pneumonia	68	5.2	139	48.9
..	Bronchitis, emphysema, asthma	66	5.1	146	45.2
..	Other causes	184	14.1	..	..

(a) Deaths in specified age groups as a percentage of total deaths for a particular cause.

(b) Includes Hodgkin's Disease and the Leukaemias.

Heart Diseases

As the previous table indicates, heart diseases (list items 390-398, 400-404, 410-429) are the greatest single cause of death. In the following record of deaths due to heart diseases, 1950 has been chosen as a start-point since earlier figures are not strictly comparable. It can be seen from the table that heart diseases account for over one-third of the 'Deaths From All Causes'. The table also shows that more males die of heart disease than females.

Deaths from Heart Diseases (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950	413	304	717	257	29.1
1964	677	454	1,131	310	35.6
1965	701	458	1,159	315	38.1
1966	656	464	1,120	301	35.5
1967	663	473	1,136	302	35.2
1968	680	493	1,173	307	35.7
1969 ^p	701	483	1,184	305	35.8

(a) List items 400-416, 420-443 to 1967, 390-398, 400-404, 410-429 from 1968.

Tuberculosis

A development of recent years has been the marked decline in deaths attributed to tuberculosis. In the following table, 1950 has been chosen as the start-point, earlier figures being not strictly comparable due to changes in classification and in the method of determining a single cause of death where multiple causes are shown on the death certificate.

Deaths from Tuberculosis (All Forms) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950	27	44	71	25	2.9
1964	10	1	11	3	0.3
1965	6	3	9	2	0.3
1966	6	5	11	3	0.3
1967	4	3	7	2	0.2
1968	12	2	14	4	0.4
1969p	4	2	6	1	0.2

(a) List items 001-019 to 1967; 010-019 from 1968.

Malignant Neoplasms

In the next table, deaths from 'Malignant Neoplasms including Hodgkin's Disease and the Leukaemias' are summarised:

Deaths from Malignant Neoplasms (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950	159	164	323	115	13.1
1964	230	221	451	124	14.2
1965	246	233	479	130	15.7
1966	251	245	496	133	15.7
1967	302	227	529	140	16.4
1968	273	220	493	129	15.0
1969p	282	228	510	131	15.4

(a) List items 140-207 to 1967; 140-209 from 1968.

Lung Cancer

There has been considerable interest recently in lung cancer because of its suspected connection with smoking habits. The following table shows deaths attributed to 'Malignant Neoplasm of Respiratory System' since 1950:

Deaths from Malignant Neoplasm of Respiratory System (a)

Year	Males	Females	Persons	Year	Males	Females	Persons
1950 ..	20	4	24	1962 ..	70	8	78
1955 ..	33	7	40	1963 ..	44	9	53
1956 ..	35	9	44	1964 ..	51	16	67
1957 ..	43	7	50	1965 ..	60	11	71
1958 ..	29	10	39	1966 ..	76	16	92
1959 ..	43	11	54	1967 ..	78	9	87
1960 ..	40	3	43	1968 ..	69	12	81
1961 ..	47	3	50	1969p ..	85	11	96

(a) List items: 160-165 to 1967; 160-163 from 1968.

THE PROBLEM OF HYDATID DISEASE IN TASMANIA

Introduction

Hydatid disease of humans is characterised by the presence of cysts, mainly in the liver and lungs. These cysts are an intermediate stage in the development of a small tapeworm, *Echinococcus granulosus*, which lives as a parasite in the intestinal tract of dogs. Dogs become infected by eating the cystic stages in the offal of sheep, cattle, or pigs, which, along with the human, are intermediate hosts. The adult worms in the dog are only about 3/16 inch (5 mm) long when fully grown, but each worm produces eggs at the rate of several hundred a week. These eggs are voided in the dog's droppings, and intermediate hosts are infected by accidental swallowing of contaminated material. As well as liver and lungs, the cysts sometimes develop in other parts of the body, such as the brain, heart and bones.

History

In 1953, Sir Harold Dew placed Tasmania among the five worst regions in the world for hydatid disease, with an incidence of 9.3 cases per 100,000 population. This figure, based on hospital admissions for the years 1949-53, represented approximately 27 cases per year. In 1962, Mr G. K. Meldrum, the Chief Veterinary Officer of Tasmania, obtained reports from Tasmanian surgeons of 537 cases which had required surgery during the previous 10 years.

In 1962 public interest was aroused by the quotation of figures such as these, and by a series of public meetings which were called by Dr T. C. Beard, a medical practitioner in Campbell Town, to bring the problem to the notice of the people of the State. Farmers' organisations appointed subcommittees to consider the problem, and in November 1962, these amalgamated together to form the Tasmanian Hydatids Eradication Council. This Council encouraged the formation of local voluntary committees whose aim was to interest all people in their districts in control of the disease, i.e. in the proper feeding and control of dogs.

In 1963 the Government authorised the Department of Agriculture to put into operation a plan which the Chief Veterinary Officer had prepared some years before. This plan proposed the training of twenty special officers, to examine all dogs in the State for hydatid worms, and to give advice and instruction to all dog owners, especially those whose dogs were found to be infected. By September 1964 the plan was in operation, and in the early stages it relied heavily on the co-operation of the voluntary local hydatids committees. The Tasmanian Hydatids Eradication Council was given an annual grant to enable it to appoint a full-time secretary, and to widen its publicity campaign. From the first, the Council and the Department of Agriculture have worked as partners in the programme, particularly in the fields of general publicity and education of school children.

In the last four years, a Division of Public Health survey of hospital cases has revealed the following incidence of hydatid disease:

Hydatid Cases Admitted, Tasmanian Hospitals

Year	New Cases	Re-admissions	Total Cases Admitted			Deaths
			Males	Females	Persons	
1966-67	24	2	14	12	26	1
1967-68	22	6	11	17	28	..
1968-69	6	5	4	7	11	1
1969-70	11	8	12	7	19	..

These figures suggest a possible reduction in infection rates, although it is also possible that lower figures for the last two years represent merely random fluctuations.

As one result of the testing programme, the incidence of infected dogs revealed by the test has fallen considerably. Because of the very low incidence of infected dogs in metropolitan areas, future testing will be concentrated mainly on dogs from rural areas. In 1969-70 the rural parts of the City of Glenorchy were added to the testing programme. With the inclusion of Glenorchy all local government areas in Tasmania with the exception of Hobart (essentially an urban area) are participating in the scheme.

The following table of Department of Agriculture testing results indicates a fall in the number of infected dogs.

Department of Agriculture: Dog Testing Results

Municipalities tested for—	Years	Dogs			Owners of Tested Dogs		
		Number Tested	Infected Dogs		Total Number	With Infected Dogs	
			Number	Proportion of Dogs Tested		Number	Proportion of Owners of Tested Dogs
				per cent			per cent
Five years (a)	1965-66	8,013	881	11.0	3,263	484	14.8
	1966-67	7,733	442	5.7	3,943	324	8.2
	1967-68	7,828	286	3.7	4,149	224	5.4
	1968-69	8,709	181	2.1	4,876	151	3.1
	1969-70	7,869	84	1.1	4,347	75	1.7
Four years (b)	1966-67	11,167	421	3.8	6,692	293	4.4
	1967-68	8,068	159	2.0	4,693	134	2.9
	1968-69	6,914	106	1.5	3,996	96	2.4
	1969-70	5,571	73	1.3	3,114	58	1.9
Three years (c)	1967-68	3,436	14	0.4	2,481	14	0.6
	1968-69	1,422	3	0.2	911	3	0.3
	1969-70	1,513	5	0.3	922	4	0.4
Two years (d)	1968-69	4,814	19	0.4	3,840	19	0.5
	1969-70	2,539	4	0.2	1,794	4	0.2
One year (e)	1969-70	116	1	0.9	65	1	1.5

(a) Municipalities of Beaconsfield, Bothwell, Campbell Town, Evandale, Fingal, Flinders, George Town, Glamorgan, Green Ponds, Lilydale, Longford, Oatlands, Ringarooma, Ross, Scottsdale, Westbury.

(b) Municipalities of Brighton, Bruny, Clarence, Deloraine, Devonport, Hamilton, Kentish, Latrobe, New Norfolk, Penguin, Portland, Richmond, St Leonards, Sorell, Spring Bay, Tasman, Ulverstone.

(c) Municipalities of Burnie, King Island, Kingborough, Wynyard.

(d) Municipalities of Circular Head, Esperance, Gormanston, Huon, Launceston, Port Cygnet, Queenstown, Strahan, Waratah, Zeehan.

(e) Municipality of Glenorchy (rural dogs only).

EXPECTATION OF LIFE TABLES

Previously, reference was made to the limitations of crude death rates as a measure of mortality. However, a correct measurement of the mortality of the population can be obtained from life tables.

It has been the practice at each census from 1911 onwards to prepare life tables representative of the mortality experience of Australia. Tables were compiled for each State and for Australia as a whole in respect of each sex for each of the decennial periods 1881 to 1890, 1891 to 1900, and 1901 to 1910. At the Census of 1921, life tables were prepared by the Commonwealth Statistician from the recorded census population and the deaths in the three years 1920 to 1922. Tables based on data derived from later censuses have been compiled by the Commonwealth Actuary.

The expectation of life of males and females at various ages as revealed by these investigations is shown in the following table.

Expectation of Life (a)—Australia: 1881-90 to 1960-62
(Years)

Age Last Birthday (Years)	1881 to 1890	1891 to 1900	1901 to 1910	1920 to 1922	1932 to 1934	1946 to 1948	1953 to 1955	1960 to 1962
MALES								
0	47.20	51.08	55.20	59.15	63.48	66.07	67.14	67.92
5	52.86	55.61	57.91	60.43	62.57	63.77	64.32	64.77
10	48.86	51.43	53.53	56.01	58.02	59.04	59.53	59.93
15	44.45	46.98	49.03	51.44	53.36	54.28	54.72	55.07
20	40.58	42.81	44.74	46.99	48.81	49.64	50.10	50.40
25	37.10	38.90	40.60	42.70	44.37	45.04	45.54	45.80
30	33.64	35.11	36.52	38.44	39.90	40.40	40.90	41.12
35	30.06	31.34	32.49	34.20	35.46	35.79	36.25	36.45
40	26.50	27.65	28.56	30.05	31.11	31.23	31.65	31.84
45	23.04	23.99	24.78	26.03	26.87	26.83	27.18	27.38
50	19.74	20.45	21.16	22.20	22.83	22.67	22.92	23.13
55	16.65	17.08	17.67	18.51	19.03	18.84	19.00	19.18
60	13.77	13.99	14.35	15.08	15.57	15.36	15.47	15.60
65	11.06	11.25	11.31	12.01	12.40	12.25	12.33	12.47
70	8.82	8.90	8.67	9.26	9.60	9.55	9.59	9.77
75	6.72	6.70	6.58	6.87	7.19	7.23	7.33	7.47
80	5.11	5.00	4.96	5.00	5.22	5.36	5.47	5.57
85	3.86	3.79	3.65	3.62	3.90	3.84	4.01	4.08
90	2.91	2.91	2.64	2.60	2.99	2.74	2.93	3.02
95	2.16	2.16	1.88	1.86	2.11	1.93	2.10	2.29
100	1.32	1.29	1.18	1.17	1.10	..	..	..
FEMALES								
0	50.84	54.76	58.85	63.31	67.14	70.63	72.75	74.18
5	56.00	58.64	60.80	63.64	65.64	67.91	69.61	70.78
10	51.95	54.46	56.39	59.20	61.02	63.11	64.78	65.92
15	47.54	49.97	51.86	54.55	56.29	58.27	59.90	61.01
20	43.43	45.72	47.52	50.03	51.67	53.47	55.06	56.16
25	39.67	41.69	43.36	45.71	47.19	48.74	50.24	51.32
30	36.13	37.86	39.33	41.48	42.77	44.08	45.43	46.49
35	32.58	34.14	35.37	37.28	38.37	39.46	40.67	41.70
40	29.08	30.49	31.47	33.14	34.04	34.91	36.00	36.99
45	25.56	26.69	27.59	28.99	29.74	30.45	31.44	32.38
50	22.06	22.93	23.69	24.90	25.58	26.14	27.03	27.92
55	18.64	19.29	19.85	20.95	21.58	22.04	22.81	23.63
60	15.39	15.86	16.20	17.17	17.74	18.11	18.78	19.51
65	12.27	12.75	12.88	13.60	14.15	14.44	15.02	15.68
70	9.70	9.89	9.96	10.41	10.98	11.14	11.62	12.19
75	7.24	7.37	7.59	7.73	8.23	8.32	8.69	9.16
80	5.27	5.49	5.73	5.61	6.01	6.02	6.30	6.68
85	3.90	4.12	4.19	4.06	4.30	4.32	4.52	4.79
90	2.98	3.07	2.99	2.91	3.05	3.08	3.24	3.48
95	2.25	2.18	2.10	2.07	2.00	2.14	2.31	2.59
100	1.37	1.23	1.24	1.24	1.02	..	..	..

(a) Refers to population exclusive of full-blood Aborigines.

Chapter 6

PRIMARY INDUSTRY—RURAL

LAND TENURE AND SETTLEMENT

Introduction

The area of Tasmania is 16,885,000 acres, all of which had been proclaimed as Crown property when the first settlers arrived in 1803. In the period since their landing, 39.4 per cent of the State's total area has been alienated by grant or sale; the Crown still owns 59.1 per cent and the residual 1.4 per cent is in the process of alienation (i.e. being purchased from the Crown by instalment payments).

Historical

The first concern of the settlers on the Derwent and the Tamar in 1804 was the growing of grain for which small holdings were adequate; thus by 1820, land obtained as grants from the Crown was confined to areas within easy reach of Hobart and Launceston and of the 16,885,000 acres of Crown land, less than 70,000 acres had been alienated.

In the 1820s, the successful export of wool to Britain created a demand for land in very much larger holdings and annual alienation of Crown land by free grant increased rapidly as shown in the following table:

Area of Land Alienated by Grants in Van Diemen's Land, 1820 to 1843
(⁰000 Acres)

Year	Area Granted	Year	Area Granted	Year	Area Granted	Year	Area Granted
1820 ..	69	1826 ..	60	1832 ..	33	1838 ..	45
1821 ..		1827 ..	77	1833 ..	24	1839 ..	15
1822 ..	<i>n.a.</i>	1828 ..	165	1834 ..	9	1840 ..	10
1823 ..	434	1829 ..	208	1835 ..	9	1841 ..	7
1824 ..	43	1830 ..	108	1836 ..	8	1842 ..	..
1825 ..	(a)462	1831 ..	206	1837 ..	22	1843 ..	1

(a) Includes 350,000 acres granted to Van Diemen's Land Company.

From the previous table, it can be calculated that the alienation of Crown land by grant exceeded, in total, one million acres by 1825 and two million acres by 1843 (when this early system of free grants had virtually ceased). Apart from the 350,000 acres granted to the Van Diemen's Land Company in the north-west, the other alienated land included virtually the whole Midlands, the upper Derwent Valley and much of the east coast. At the same time—1843—less than 500,000 acres of Crown land had been sold, even though the price per acre ranged from \$0.50 to \$1.20.

A table in *Statistics of Van Diemen's Land* gives details of alienation in aggregate, and of leasing of Crown land at 1 January 1850 as follows:

Total Area Granted and Sold to Settlers 2,722,513 acres

Area of Land Held under Depasturing Licences .. 1,335,779 acres

The Crown land under licence was a source of revenue to the Government which made available 1.3 million acres for a rental of \$33,428 in 1849. From this time, the process of alienation can be summarised as follows:

Land Alienation from 1860
(^{'000 Acres})

Year (a)	Land		Year (a)	Land	
	Aggregate Alienated	In Process of Alienation		Aggregate Alienated	In Process of Alienation
1860		3,069	1960	6,386	190
1880		4,233	1963	6,430	199
1900		4,835	1964	6,598	220
1910	4,932	1,104	1965	6,619	204
1920	5,242	964	1966	6,616	208
1930	5,721	542	1967	6,652	246
1940	5,912	423	1968	6,651	229
1950	6,143	365	1969	6,655	236

(a) At 31 December until 1948; at 30 June for 1950 and following years.

Sales of Crown Land

The sale of Crown land is currently carried out under the *Crown Lands Act* 1935 as amended. Sales fall into two broad categories: (i) by selection; (ii) by auction. In the case of selection, three classifications of rural land are established and purchase is made over a number of years by instalments, the term depending on the class of land. Land on which such instalments are being paid is defined as 'Crown land in process of alienation'. The following table shows details of recent sales:

Sales of Crown Land, 1968-69

Particulars	Number of Lots	Area	Value	
			Total	Average per Acre
		acres	\$	\$
Selections (Country Land) (a)—				
First-class land	12	1,086	25,622	23.59
Second-class land	46	9,823	125,856	12.81
Third-class land	25	4,885	106,910	21.89
Sold by Auction (Country Land) ..				
Total	83	15,794	258,388	16.36
Town and Suburban Lots	26	118	121,993	1,033.84
Grand Total	109	15,912	380,381	..

(a) Financial details refer to the contract price, the actual payment being made in instalments over a period of years.

The next table summarises sales of Crown land over a five-year period:

Sales of Crown Land—Summary

Year	Area of Land Sold (Acres)			Average Price per Acre (\$)	
	Country Lots	Town and Suburban Lots	Total	Country Lots	Town and Suburban Lots
1964-65	22,454	255	22,709	7.94	154.47
1965-66	24,035	1,591	25,626	5.30	5,676
1966-67	46,633	128	46,761	13.20	390.63
1967-68	7,896	496	8,392	11.68	166.42
1968-69	15,794	118	15,912	16.36	1,033.84

Present Use of Crown Lands

The total area of Tasmania is 16,885,000 acres, of which, at 30 June 1969, 39.4 per cent had been alienated; 1.4 per cent was in the process of alienation; the balance, 59.1 per cent, was Crown land, a proportion of which was under lease or licence for pastoral, agricultural and mining purposes. Crown land reserved for forestry purposes, including the State forests, accounted for 32.7 per cent of the State's area. ('Reservation' in the context of forestry does not imply land withheld from all types of use but simply land either used or to be used exclusively for forestry purposes.)

Alienation and Occupation of Crown Lands, 30 June 1969
(Acres)

Classification of Land	Area
Alienated (Aggregate)	6,655,456
In Process of Alienation	236,451
Crown Lands—	
Leased or Licensed—	
Through Lands Department—	
Pastoral	661,542
Closer Settlement	8,093
Soldier Settlement	29,098
Short-term	512
Through Mines Department	66,245
Total Leased or Licensed	765,490
Forestry Reservations—	
State Forests	2,708,808
Other Land Reserved for Forestry Purposes (a)	2,814,393
Total Forestry Reservations	5,523,201
Other Crown Land	3,704,402
Area of State	16,885,000

(a) Includes estimated forested component of national parks and scenic reserves.

The previous table includes the item 'Forestry Reservations'. Cutting rights, either by exclusive forestry permit or by the award of pulpwood concessions, have been granted over almost 4.5 million acres of this area. A large proportion

of the logs for sawmills, paper mills, etc. is obtained from these forestry reservations. Further details of Crown land reserved for forestry appear in the Forestry section of Chapter 7, 'Primary Industry—Non Rural'.

The next table summarises the alienation and occupation of Crown lands over a five-year period:

**Alienation and Occupation of Crown Lands
at 30 June**

Classification of Land	1965	1966	1967	1968	1969
AREA ('000 ACRES)					
Alienated (Aggregate) ..	6,619	6,616	6,652	6,651	6,655
In Process of Alienation ..	204	208	246	229	236
Crown Lands—					
Leased or Licensed (a) ..	1,025	977	969	826	765
Forestry Reservations (b) ..	4,437	4,489	4,513	4,537	5,523
Other	4,600	4,595	4,505	4,642	3,704
PROPORTION OF TOTAL AREA (PER CENT)					
Alienated (Aggregate) ..	39.2	39.2	39.4	39.4	39.4
In Process of Alienation ..	1.2	1.2	1.5	1.4	1.4
Crown Lands—					
Leased or Licensed (a) ..	6.1	5.8	5.7	4.9	4.5
Forestry Reservations (b) ..	26.3	26.6	26.7	26.9	32.7
Other	27.2	27.2	26.7	27.5	21.9

(a) Through Lands Department and Mines Department.

(b) Includes State forests and estimated forested component of scenic reserves and national parks.

Although the possibility of rapidly alienating more Crown land for farming purposes on any large scale may seem remote, it should be noted that much of this area is nevertheless of importance to the State's economy, specifically for forestry and tourism. Crown land reserved for forestry use occupies approximately 32.7 per cent of the area of the State while reservations classed as National Parks and Scenic Reserves account for 6.1 per cent. Details of the latter type of reservation appear in the next section.

National Parks and Scenic Reserves

The Scenery Preservation Board is responsible for the administration of the State's National Parks and Scenic Reserves which occupy a part of the residual Crown land. Details of National Parks are as follows:

National Parks at 30 June 1970

Name	Locality	Area (Acres)
Cradle Mountain-Lake St Clair	Central Highlands	338,496
South-West (incl. Lake Pedder)	South-West	473,411
Mt Field	Derwent Valley	40,058
Ben Lomond	North-East	39,615
Frenchmans Cap	West Coast	25,240
Hartz Mountains	South	21,300
Mt Barrow	North	1,134
Freycinet Peninsula	East Coast	18,420
Rocky Cape	North-West	4,000

The area under reservation as National Parks is 961,675 acres, and as Scenic Reserves, a further 61,904 acres; in total, 1,023,579 acres. The following list gives details of the various types of reserve, together with location and area (expressed to the whole number below where fractions of an acre are recorded):

Scenic Reserves at 30 June 1970

Type of Reserve and Name	Locality	Area (Acres)
Coastal Reserves—		
Stewarts Bay	Tasman Peninsula	7
Stewarts Bay, Esplanade, Pt Puer	Tasman Peninsula	58
Pt Puer-Crescent Bay	Tasman Peninsula	92
Brown Mt-Remarkable Cave	Tasman Peninsula	150
Eaglehawk Neck and Foreshore	Tasman Peninsula	90
Eaglehawk Neck-Taranna	Tasman Peninsula	61
Tasman Arch-Blowhole	Tasman Peninsula	140
Waterfall Bay	Tasman Peninsula	30
Fossil Island	Tasman Peninsula	3
Tessellated Pavement	Forestier Peninsula	9
Lookout Rock	Bicheno	5
Cookville-Penguin Island	Bruny Island	3
Fluted Cape-Cloudy Bay	Bruny Island	600
Port Davey Foreshore	South-West	1,350
Port Davey Islands	South-West	202
Schouten Island	East Coast	8,500
Waterfalls—		
St Columba	Pyengana	775
Forth	Sheffield	135
Marriott	National Park	300
Liffey	Western Tiers	250
Mt Barrow	North	200
River Reserves—		
River Pieman	West Coast	8,215
River Gordon	West Coast	6,200
Roger River Pass	North-West	430
Derwent Cliffs	New Norfolk	11
Cave Reserves—		
Hastings	South	131
Marakooa	Mole Creek	146
King Solomon	Mole Creek	500
Baldock (3 areas)	Mole Creek	37
		63
		5
Gunns Plains	Ulverstone	24
Scenic Roads—		
Lyell Highway	Western Highlands	18,000
Zeehan-Renison Bell	West Coast	272
St Marys Pass	St Marys	674
Murchison Highway	West Coast	1,516
Fern Gullics, Forests, etc.—		
Thermal Springs	Kimberley	1
Thermal Springs	Hastings	19
Chalet	Hastings	1
Waterfall Creek	Bruny Island	60
Ferndene Gorge	Penguin	6
Notley Gorge	West Tamar	28
Hellyer Gorge	Waratah area	1,406
Corra Linn	Launceston	1
Corinna	West Coast	8
Bird Sanctuary	Steppes	16
Fairy Glade	Western Tiers	97
Bradys Lookout	Rosevears	2
Parramores Lookout	Port Arthur	1
Mt Strzelecki	Flinders Is.	9,750
St Patricks Head	St Marys	370

Scenic Reserves at 30 June 1970—*continued*

Type of Reserve and Name	Locality	Area (Acres)
Historic Sites, Buildings and Monuments—		
Town of Port Arthur	Tasman Peninsula	217
Mt Arthur	Tasman Peninsula	10
Convict Coal Mines	Saltwater River	528
Bowen's Monument	Risdon	..
Bowen Park	Risdon	6
George III Monument	Southport	25
Tasman Monument	Dunalley	..
D'Entrecasteaux Monument	Gordon	1
York Town	West Tamar	6
D'Entrecasteaux' Watering Place	Recherche Bay	3
Settlement Island	Macquarie Harbour	15
Isle of Condemned	Macquarie Harbour	..
Old Gaol and Paddock	Richmond	1
Entally House	Hadsphen	85
Steppes Homestead	Steppes	25
Shot Tower	Taroona	8
Waubadebar's Grave	Bicheno	..
Toll House	New Norfolk	..
Bluff Battery	Bellerive	4
Oatlands Mill	Oatlands	..
161 Davey Street	Hobart	..
Batchelor's Grave	Taroona	..

War Service Land Settlement

After both World Wars, Government schemes were operated to assist ex-servicemen to settle on the land. The following section deals only with the scheme initiated to settle on the land eligible ex-servicemen from the 1939-45 War, and the Korean and Malayan operations.

The Commonwealth has provided finance but the administration has been undertaken by the War Service Land Settlement Division of the Agricultural Bank, a State development authority. Work has been completed and all holdings have been made over to settlers.

The following table summarises progress in physical terms (farms allotted, etc.) and in financial terms (loans to settlers, payments for acquisition, etc.):

**War Service Land Settlement,
1939-1945 War and Korea-Malaya Operations
Summary to 30 June 1969**

Operations		Commonwealth Expenditure (Aggregate)	
Particulars	Total to 30 June 1969	Advances in Respect of Tasmania	Total to 30 June 1969 (\$'000)
Land Acquired (Acres) ..	495,106	For Acquisition of Land	5,068
Farms Allotted—		For Development and Improvement of	
Number	500	Land	35,609
Area (Acres)	452,317	Contribution to Excess Cost over Val-	
Farms Being Developed—		uation	15,746
Number .. .. .	..	Settlers' Credit Facilities	14,370
Area (Acres) .. .. .	..	Remission of Settlers' Rent and Interest	627
		Living Allowances for Settlers ..	457
		Irrigation Projects	6
		Loss on Advances	326
		Cost of Administration of Credit	
		Facilities	781
		Total	72,990

Of the farms allotted to 30 June 1969, the largest concentrations were at King Island, Flinders Island, the Lawrenny Estate and the Montagu project. At the end of the 1968-69 financial year eight were vacant.

Of the 494 farms both allotted and occupied at 30 June 1969, the most popular types were: dairy farms, 194; fat lamb farms, 171; fat lamb and beef farms, 71; wool sheep farms, 20.

Advances to Primary Producers

Although the principal efforts in land settlement since World War II have been made under the War Service Land Settlement Scheme, the State Government has also operated its own loans schemes to assist primary producers. The following table shows particulars of advances under various Acts:

Advances to Primary Producers by Agricultural Bank

Act	Total Advances Made During 1968-69	Total Advances to 30 June 1969	Balances Outstanding at 30 June 1969	
			Number	Amount
	\$'000	\$'000		\$'000
State Advances Act (including Rural Credits) 1935	676	14,190	1,394	4,914
Commonwealth Re-establishment and Employment Act 1945 ..	..	834	62	45
Primary Producers' Relief Act 1947 .. ..	..	595	7	4
Primary Producers' Relief Act 1962 .. ..	..	19	3	4
Primary Producers' Relief Act 1968	160	160	49	160
Closer Settlement (Soldiers) Act ..	16	2,184	81	94
Closer Settlement Act	90	590	148	569
Fire Damage Relief Act 1967 ..	375	2,464	834	2,464
Total	1,317	21,036	2,578	8,254

The main forms of assistance now available to settlers are: (i) Under Part III of the *State Advances Act* 1935, loans may be made to persons in rural industries for the purchase of farm properties, discharge of mortgage or for making improvements. Loans may be made for periods up to 30 years at an interest rate determined by the Treasurer. In September 1969, the rate was increased from 5.75 per cent to 6.0 per cent. The present limit on any single advance is \$20,000; and (ii) under Part IV of the Act (Short Term Rural Credits), loans may be made to persons engaged in prescribed rural industries for the purchase of stock, plant, seeds and manures and for other purposes considered necessary for carrying on their industry. There is no statutory limit to the amount which may be advanced to each applicant. Usual period of loans are: plant, 10 years; stock, five years; land development, 10-15 years; structural improvements, 20 years; working expenses, one to three years.

The *Fire Damage Relief Act* 1967 was part of the State Governments' re-action to the disastrous bushfires of February 1967 when 650,000 acres of farm land, bush and forest were devastated in fourteen southern municipalities; the fire caused severe stock and fodder losses and destroyed farm homes, barns, fences, etc. Assistance for the rebuilding of farmers' homes was provided under the general scheme applicable to all citizens but other types of farm rehabilitation were provided for in a loan scheme administered by the Agricultural Bank.

RURAL INDUSTRY

General

The Tasmanian rural economy is marked by great diversity and, even allowing for the special regional adaptations made necessary by soil, climate, terrain and altitude, there are many rural holdings which individually exhibit an extremely varied range of activities.

In the early colonial days, Tasmania was Australia's granary (because of its wheat production in the Sorell and Longford areas), yet there is hardly any extensive area suitable for the large-scale mechanised farming as now practised in the Australian wheat belt. At a later stage, the island acquired a reputation for potato growing, production in some years outstripping that of any other Australian State. The present pattern of farming puts far more emphasis on the rearing of livestock and on the increased production of wool, meat and dairy products; field crops now include vegetables for canning and freezing but the relatively large areas devoted to oats, green feed and vegetables for stock feed are indicative of an orientation towards livestock raising. The traditional 'specialities', orchards and hop growing, are still important in the total picture but the major development in the years since World War II has been the rapid creation of large areas of sown and semi-improved pasture.

The next section deals with the early history of Tasmanian farming and emphasises the importance of wheat growing in the early colonial era.

Historical

From the time of the first settlement, the provision of adequate food supplies was a major problem for the colonists. From 1804 to 1812, the food situation was critical, being an almost continuous period of famine.

The pattern of early agricultural development can be inferred from the following summary of official farm statistics:

Area Under Crops—Van Diemen's Land, 1818-1841
(Acres)

Year	Wheat	Barley	Oats	Peas	Beans	Potatoes	Turnips	English Grasses	Tares	Total Crops
1818 ..	5,049	214	<i>n.a.</i>		149	268	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	(<i>a</i>)
1828 ..	20,357	3,864	1,573	646	35	1,292	1,296	4,970	..	34,033
1838 ..	41,760	13,495	21,576	868	128	3,532	9,054	17,150	437	108,000
1841 ..	63,734	9,010	16,471	738	102	4,185	15,943	22,082	349	132,614

(*a*) Not available on a comparable basis.

Livestock statistics for the same period are summarised as follows:

Livestock—Van Diemen's Land, 1818-1841

Year	Horses	Horned Cattle	Sheep	Goats
1818	267	12,356	127,883	..
1828	2,034	84,476	553,698	708
1838	9,656	75,087	1,214,485	2,400
1841	12,000	90,498	1,167,737	2,630

Early Development—First Phase

Although the early colonists had to travel half-way round the globe, Tasmania's temperate climate allowed them to pursue a type of farming which was little different from that carried on in contemporary England—certainly the crops grown were the same; however, the grazing of livestock on extensive bush-runs, the use of convict labour, the clearing of scrub and the occasional menace of the aboriginal and the bushranger were sufficient reminders that home lay 12,000 miles away.

Early farm development round the Derwent settlement occurred in what are now suburbs of Greater Hobart (New Town and Glenorchy) and further up-river at New Norfolk. The attraction of open plains and open forest country then drew settlers into the Coal River Valley (Richmond and Sorell), into the Midlands and parts of the East Coast. The Tamar settlers in the north first worked land on the plains around the site of Launceston, with early expansion to the Longford area and with grazing in the St Leonards and White Hills districts; the northern Midlands were also developed as farming country in this era.

As suggested by the previous table of areas, the principal crop was wheat. In 1842, the island colony was Australia's principal wheatgrower, with nearly 80,000 acres sown to this crop, out-stripping N.S.W., W.A., Victoria and S.A. individually and contained nearly half the Australian wheat acreage. Throughout the 19th century, wheat was a principal cash crop, but eventually competition from the other States (both in type and price) caused a decline, as shown in the following table:

Wheat for Grain—Area and Total Production, Selected Years

Year	Area	Production	Year	Area	Production
	acres	'000 bushels		acres	'000 bushels
1860-61 ..	66,450	1,416	1930-31 ..	19,107	391
1870-71 ..	57,382	897	1940-41 ..	8,038	140
1880-81 ..	50,022	750	1945-46 (b) ..	4,982	67
1890-91 ..	32,452	643	1950-51 ..	5,318	95
1898-99 (a) ..	85,287	2,304	1960-61 ..	6,912	148
1900-01 ..	51,825	1,110	1966-67 ..	12,747	385
1910-11 ..	52,242	1,121	1967-68 ..	12,018	316
1920-21 ..	28,284	566	1968-69 ..	17,394	410

(a) Peak production year.

(b) Record low production year.

The present position is that Tasmanian bread is made entirely from imported wheat and the home-grown product is used to make high quality biscuit flours for which it is well suited, and for stock feed.

Early Development—Second Phase

Before the 1850s, most farm land had been confined to the eastern half of the State where open plains and open forest country encouraged penetration. The pastoral venture of the Van Diemen's Land Company in the north-west is the principal exception to this generalisation (see Chapter 2). Further development, supported by the buoyant market during the Victorian gold rush, required the clearing of more thickly timbered land, the principal attraction being the fertile chocolate-coloured volcanic soils of the North-West Coast; in the same decade, the discovery of the basalt lands in the Scottsdale-

Ringarooma area was followed by settlement in the North-East. It was in this second phase that the practice of ring-barking trees helped settlers make progress in thickly-forested country.

Late in the 19th century, pioneers began to develop orchards, mainly for apples, in the thickly-timbered country of the Huon, Tamar and lower Mersey Valleys. In the decade after Federation, annual apple production commenced to exceed one million bushels (as compared with the 1963-64 record crop of 8½ million bushels).

Because of the heavy clearing work necessary in the second phase of development (which lasted up till the First World War), it can appropriately be called the bush pioneering period.

Recent Development

Following World War I, the State fostered farming development through schemes for the settlement of returned soldiers, but this largely involved the acquisition and sub-division of existing properties, the only major conversion of virgin land being at Brittons Swamp on the North-West Coast. After World War II, soldier settlement and closer settlement schemes of a more ambitious nature were undertaken, the main areas of development being King and Flinders Islands, the Waterhouse and Tomahawk projects in the North-East and the reclamation of Montagu Swamp on the far North-West Coast. (Another project involved the sub-division of the Lawrenny Estate in the Hamilton area of the Midlands.) Major private schemes are now in progress for pastoral development in the far North-East, where modern machinery makes light work of clearing the low scrub and where low-density grazing had once been the only form of utilisation.

Rural Industry Statistics

Sources of Information

The statistics are, in the main, compiled from census returns of agricultural, pastoral and dairying production collected from rural holdings in Tasmania at 31 March each year. In conjunction with the general census, supplementary collections from farms are conducted where the harvesting of certain crops has not been completed by 31 March (e.g. apples, potatoes).

Additional information is also obtained from a number of entirely separate collections covering such data as slaughterings, meat production and dairy production and from various marketing and other authorities.

Period Covered

Data relating to area sown, production and number of holdings growing crops are, in general, for the season ended 31 March. In cases where harvesting has not been completed by 31 March (e.g. potatoes), total production is nevertheless collected and included in published figures. Livestock numbers also are reported as at 31 March.

Rural Holdings

A 'rural holding' is defined as a piece of land of one acre or more in extent, used for the production of agricultural products or for the raising of livestock and the production of livestock products. Care should be exercised in drawing conclusions from changes in the number of rural holdings over a series of years. There are many small sub-commercial holdings, a proportion being no more than large residential blocks with perhaps a small plot of

potatoes or other crops, or carrying a house-cow or poultry. It is very difficult, in some cases, to determine whether or not they should be regarded as rural holdings within the definition, and some variation in treatment over time has occurred.

Area of Crops

Total area of land sown or planted to crops is shown irrespective of whether the whole area was subsequently harvested or whether a portion or the whole of the crops failed and was not harvested. Where two successive crops are grown on the same land during the one season, the land is included twice in the area of crops.

Value of Production

The statistics in the following sections refer, in the main, to areas sown to crops and quantities produced. The value of the various crops is shown under 'Value of Production' in Chapter 7.

Classification of Rural Holdings By Type of Activity

Because many Tasmanian holdings are devoted, in the main, to more than one specific type of farming activity, it is difficult to present, in summary form, the essential characteristics or structure of rural industry in the State today. Before considering in detail crop areas, production statistics and livestock numbers, it is logical to examine the 'main line' of each farm and to determine what are the principal activities; from this study can be evolved a classification of holdings by type of activity. In 1959-60, the first attempt was made at classifying rural holdings in all States on a uniform basis. A similar classification was made for 1965-66, and Tasmanian details are shown in the next table. A detailed publication entitled *Classification of Rural Holdings by Size and Type of Activity* 1965-66 has been issued for each State and Australia as a whole by the Bureau of Census and Statistics. Classification by type of activity is carried out at irregular intervals and not annually.

Because of the large number of holdings on which more than one type of activity occurs, it was necessary to determine the principal activity before such holdings could be classified to particular types. Since it was desirable to exclude from the principal classification small sub-commercial holdings (generally operated only on a part-time basis), it was also necessary to have some means of determining at what scale of operations holdings engaged in various activities could be considered as commercial propositions. The measuring of the importance of each type of activity was based on *gross receipts at the farm* (estimated from quantity details shown on the annual statistical returns together with price data from independent sources).

Holdings for which estimated farm gross receipts were less than \$1,600 (\$1,200 in 1959-60) were treated as 'sub-commercial' and these, together with unused holdings, holdings used for intermittent grazing, and holdings attached to prisons, hospitals, etc. were not classified by type of farming activity. When these holdings had been eliminated, farms were classified according to the formulae that follow.

If a single activity accounted for 50 per cent or more of the total gross receipts, that activity determined the holding type. Where no single activity accounted for 50 per cent of the total gross receipts, the holdings were classified as 'multi-purpose'. Principal exceptions to this general rule were holdings reporting (i) sheep and cereal grains, and (ii) cattle (milk production) and pigs. In the former case, the holding was treated as a composite sheep-cereal grain type if the combined receipts obtained from the two activities added to 75 per

cent or more of total gross receipts, so long as gross receipts from sheep were no more than four times and not less than one quarter of the gross receipts obtained from cereal grains. In the latter case, if the combined receipts obtained from cattle (milk production) and pigs represented 50 per cent or more of total gross receipts, the holding was classified as dairying.

The next table provides details of the number of holdings classified to each type of activity in each statistical division. Because of changes to the wording of the Farm Census schedule, statistics in this table are not strictly comparable with the 1959-60 classification.

A number of interesting conclusions emerge from a consideration of 'classified holdings' in the following table: (i) the main activity of over 62 per cent of classified holdings is concerned with either cattle or sheep; (ii) cereal grain growing barely exists as a main activity and is principally carried out in conjunction with the grazing of sheep or cattle; (iii) three main types of holding, namely dairying, sheep and fruitgrowing in that order, account for over 74 per cent of classified holdings; (iv) nearly 12 per cent of classified holdings must carry on at least three distinct activities, otherwise they could not be classified as 'multi-purpose' in accordance with the 50 per cent formula prefacing the table; (v) dairying is clearly the major activity of the North Western Statistical Division and fruitgrowing of the Southern Statistical Division.

Holdings Classified According to Type of Activity, 1965-66 (a)

Type of Holding	Statistical Division								Total
	North West-ern	North East-ern	North Mid-land	Mid-land	South East-ern	South-ern	West-ern	Balance (b)	
Sheep-Cereal									
Grain ..	7	1	15	10	58	1	..	1	93
Sheep ..	185	272	315	360	353	61	..	1	1,547
Cereal Grain ..	..	..	..	..	2	..	..	..	2
Cattle—Meat ..	146	60	17	4	10	31	5	3	276
Milk ..	2,109	546	164	26	48	128	..	5	3,026
Fruitgrowing ..	48	152	1	14	49	944	..	26	1,234
Vegetables—									
Potatoes ..	168	13	..	37	12	4	1	1	236
Other & Mixed	173	32	6	3	21	9	..	20	264
Poultry ..	17	18	9	3	12	27	..	7	93
Pigs ..	9	5	4	1	7	11	1	3	41
Other (One Main Purpose)	9	6	..	34	2	68	..	9	128
Multi-Purpose	474	118	161	45	66	54	1	5	924
Total 'Classified' ..	3,345	1,223	692	537	640	1,338	8	81	7,864
Sub-Commercial	761	478	258	181	358	559	9	111	2,715
Unused ..	51	48	12	9	15	47	1	15	198
Total All Holdings	4,157	1,749	962	727	1,013	1,944	18	207	10,777

(a) Classification by type of activity is carried out at irregular intervals.

(b) Cities of Hobart, Launceston and Glenorchy (the statistical divisions are those in use before the Population Census of 30 June 1966).

Size of Rural Holdings

A classification of rural holdings by size is carried out at irregular intervals; the following table compares the size of holdings in selected years:

Classification of Rural Holdings by Size

Size of Holdings (Acres)	Number of Holdings		Area of Holdings (⁰⁰⁰ Acres)	
	1928	1966	1928	1966
1 and Under 50	3,164	2,365	58	50
50 and Under 100	2,108	1,625	147	117
100 and Under 500	4,779	4,770	1,095	1,069
500 and Under 1,000	726	946	594	654
1,000 and Under 5,000	775	845	1,600	1,771
5,000 and Under 10,000	146	130	1,018	892
10,000 and Under 20,000	67	67	925	910
20,000 and Under 50,000	29	24	812	711
50,000 and Over	5	5	384	323
Total	11,799	10,777	6,633	6,496

Types of Farming Activity, 1968-69

At 31 March 1969, there were 10,384 rural holdings (compared with 11,374 in 1959). The following table shows the number of holdings growing selected principal crops or carrying livestock; this gives some indication of farming activities but on a cruder basis than the earlier table since the same holding may be included more than once in the figures (in an extreme case, the one holding could be included eleven times):

Number of Holdings Growing Principal Crops or Carrying Livestock

Particulars	1958-59	1965-66	1966-67	1967-68	1968-69
Number of Rural Holdings ..	11,374	10,777	10,641	10,631	10,384
Holdings—					
Growing—					
Grain (a)—					
Barley	167	348	383	403	450
Oats	302	341	465	463	421
Wheat	104	213	194	159	239
Hops	97	107	106	111	108
Vegetables (b)—					
Potatoes	2,541	1,963	1,582	1,543	1,410
Onions	7	13	22	24	26
Fruit (b)—					
Orchard	1,561	1,305	1,260	1,184	1,108
Small Fruit	616	418	393	344	348
Carrying—					
Cattle	9,342	8,667	8,598	8,631	8,545
Sheep	5,926	5,276	5,224	5,294	5,098
Pigs	3,950	3,153	2,749	2,545	2,400

(a) Twenty acres and over.

(b) One acre and over.

It should be noted that a fall in the number of holdings engaged in a particular activity does not necessarily involve decreased total activity. Holdings carrying cattle have decreased over the last ten years, while cattle numbers have shown a 56 per cent increase in the same period. The decline in holdings growing potatoes and small fruit has been matched by an actual fall in crop acreage and in production.

Land Utilisation on Rural Holdings

Rural holdings at present occupy 39.0 per cent of Tasmania's total area; details of land utilisation follow:

Land Utilisation on Rural Holdings
(Acres)

Particulars	1958-59	1966-67	1967-68	1968-69
Area Used for Crops (a)	354,900	447,131	419,708	476,368
Land Laying Fallow (b)	72,399	86,271	76,711	61,170
Sown Pasture Grazed (c)	1,139,247	1,550,636	1,679,395	1,725,275
Other Land Used for Grazing	3,419,445	3,009,752	3,058,074	2,951,773
Balance of Holdings	1,587,442	1,413,507	1,345,329	1,376,815
Total Area of All Holdings	6,573,433	6,507,297	6,579,221	6,591,402

(a) Includes area of sown pasture *cut* for hay, seed, silage or green feed; includes also orchards and small fruits.

(b) Excludes short or summer fallow.

(c) Excludes area *cut* for hay, seed, silage or green feed.

Definition of 'Crops'

As defined in the previous table, crops are produced not only from cultivated fields and orcharding land but also from sown pasture if its growth is *cut* for hay, seed, silage or green feed. The following table shows the total area of crops on this basis when double-cropping is also taken into account:

Total Area of Crops
(Acres)

Particulars	1958-59	1966-67	1967-68	1968-69
Area Used for Crops (a)	354,900	447,131	419,708	476,368
Area Double-Cropped	2,112	8,891	10,822	12,701
Total Area of Crops	357,012	456,022	430,530	489,069

(a) First item in preceding table 'Land Utilization on Rural Holdings'.

Definition of 'Sown Pasture'

Sown pasture is defined in these statistics as 'clovers and grasses (other than native).' The next table shows the total area of sown pasture and distinguishes between areas *cut* for various purposes and areas simply grazed:

Sown Pasture—Classification of Total Area
(Acres)

Particulars	1958-59	1966-67	1967-68	1968-69
Clover for Seed	1,569	880	203	436
Grass for Seed	2,516	4,256	2,182	4,060
Clover and Grasses Cut—				
For Hay	133,600	186,959	152,481	191,439
For Silage and Green Feed	18,207	12,525	7,920	12,733
Total 'Under Crop'	155,892	204,619	162,786	208,668
Clover and Grasses Grazed (Not Cut)	1,139,247	1,550,636	1,679,395	1,725,275
Total Sown Pasture	1,295,139	1,755,255	1,842,181	1,933,943

Trend in Land Utilisation

The total area of rural holdings is still approximately the same as it was at the end of World War I. The most striking change is the rapid development of sown pasture, the previous table showing a 49 per cent increase in the decade ending 1968-69. Twenty-four years ago (1944-45), the area of sown pasture was under 500,000 acres, it passed 1,000,000 acres in 1955-56 and reached 1,934,000 acres in 1968-69. A similar increase has also occurred in the area of sown pasture *cut* for hay, seed, silage or green feed and since this is, for the purpose of these statistics, a component of the area used for crops, corresponding variations in total crop areas are due to this factor.

In fact, the area of land under the plough is slightly less than it was 50 years ago, which does not indicate a lack of progress in farming but rather a change in the farming pattern. Grain crops are no longer the dominant item and many primary producers, through their development of sown pasture, have become grassland farmers with the mower and pick-up baler as their main 'harvesting' machines (as opposed to the reaper and binder on ploughed fields). The trend to grassland farming has meant greatly increased capacity to carry stock, the numbers of both sheep and cattle having more than doubled since World War I. (In the decade ending 1968-69, sheep have increased from 3.5 million to 4.4 million; cattle from 374,000 to 586,000. The percentage increases for the ten-year period are: sheep, 24 per cent; cattle, 57 per cent.)

Temporary and Permanent Pasture

It should be noted that some of the areas included as sown pasture are 'temporary' in the sense that they may be put under crop after some years of use for grazing. In the same sense, specific areas used for crops in any year are also 'temporary' since they may later be converted to sown pasture. This rotational pattern, characteristic of much of Tasmania's mixed farming, obviously is designed to maintain soil fertility at a high level and to guard against the soil exhaustion associated with the earlier era of intense cultivation of cash crops. 'Ley' farming is the technical term for this rotational method.

Farm statistics for 1968-69 showed the area of sown pasture as 1,933,943 acres and indicated that the trend of the previous decade is being maintained.

The Tasmanian Department of Agriculture released in 1970 a new perennial rye-grass (Tasdale) superior to the widely-sown New Zealand perennial rye-grass. The main seed varieties produced on Tasmanian farms during the past five years are listed in the following table.

Grass Seed Production (a)
(Cwt)

Type of Grass	1964-65	1965-66	1966-67	1967-68	1968-69
Clover—White	1,449	381	382	394	214
Red	149	44	237	5	11
Subterranean	110	..	2	4	237
Other	82	29	10	..	13
Ryegrass—Perennial	14,947	3,389	8,324	3,971	9,227
H.I.	2,558	1,056	1,590	298	2,918
Italian	485	340	1,068	457	902
Cocksfoot	97	56	49	29	40
Other	57	21	41	215	1,042
Total	19,934	5,316	11,702	5,373	14,604

(a) Includes all pasture seed harvested, whether as a separate crop or from an area sown to oats.

Agriculture

Sufficient has been said on land utilisation to emphasise the trend to grass-land farming. In the summary table below showing the area devoted to the principal crop types, the area of sown pasture *cut* for hay, seed, silage or green feed is attributed to the appropriate crop, e.g. as a component of hay and green feed areas.

Area of Principal Crops—Summary
(Acres)

Crop	1958-59	1966-67	1967-68	1968-69
Cereals for Grain	38,123	69,738	71,532	75,074
Hay	153,822	203,181	178,838	210,563
Green Feed	79,529	86,843	83,003	111,555
Field Peas (Blue, Grey and Other)	8,505	5,982	5,562	5,606
Vegetables for Stock Feed ..	20,614	29,907	35,053	26,732
Grass Seed	4,085	5,136	2,385	4,496
Industrial Crops (Hops & Mustard)	1,717	1,801	1,907	1,913
Vegetables for Human Consumption	26,473	28,747	29,157	29,781
Orchard Fruit	20,687	20,735	20,340	19,989
Small Fruit	2,481	1,608	1,422	1,442
All Other Crops	976	2,346	1,331	1,921
Total Area of Crops ..	357,012	456,022	430,530	489,069

Details of individual crops, their area, production and yield per acre, are shown in the next table:

Crops—Area, Production and Yield Per Acre

Crop and Unit of Quantity	Average, Ten Years Ended 1967-68			Year 1968-69		
	Area (Acres)	Production		Area (Acres)	Production	
		Total	Yield Per Acre		Total	Yield Per Acre
CEREALS FOR GRAIN (BUSHELS)						
Barley	16,982	557,857	32.85	26,214	884,067	33.72
Oats	28,362	681,088	24.01	31,434	582,910	18.54
Rye	280	4,254	15.19	33	440	13.33
Wheat	12,576	317,435	25.24	17,394	410,263	23.59
HAY (TONS)						
Grass and Clover ..	144,661	271,033	1.87	191,439	456,658	2.39
Oaten	15,766	29,695	1.88	15,249	29,555	1.94
Other	2,953	5,716	1.94	3,875	8,014	2.07
GRASS SEED (CWT)						
Clover	1,091	789	0.72	436	473	1.08
Other (a)	3,326	7,604	1.93	4,060	14,130	3.04

Crops—Area, Production and Yield Per Acre—*continued*

Crop and Unit of Quantity	Average, Ten Years Ended 1967-68			Year 1968-69		
	Area (Acres)	Production		Area (Acres)	Production	
		Total	Yield Per Acre		Total	Yield Per Acre
FIELD PEAS (BUSHELS)						
Blue	4,174	90,655	21.72	3,355	79,359	23.66
Grey and Other ..	4,118	75,430	18.32	2,252	49,482	21.98
VEGETABLES FOR STOCK FEED						
Horse Beans .. bushels	456	9,937	21.81	251	4,626	18.47
Turnips, Swede and White.. .. tons	26,212	<i>n.a.</i>	<i>n.a.</i>	26,441	<i>n.a.</i>	<i>n.a.</i>
Other	239	<i>n.a.</i>	<i>n.a.</i>	41	..	..
INDUSTRIAL CROPS (LB)						
Hops (<i>b</i>)	1,453	2,654,000	1,827	1,521	3,488,000	2,293
Mustard	319	132,000	412	318	133,000	419
VEGETABLES FOR HUMAN CONSUMPTION						
Beans, French and Runner .. '000 lb	516	4,017	7.78	1,666	13,769	8.27
Peas, Green (<i>c</i>)— For Processing '000 lb	12,341	36,599	2.94	14,014	54,266	3.86
Sold in Pod .. '000 lb	171	194		96	135	
Potatoes.. .. tons	12,098	72,930	6.03	11,461	72,120	6.29
Turnips, Swede and White.. .. tons	800	5,205	6.51	661	4,345	6.57
Other Vegetables ..	1,366	..	..	1,883	..	..
ORCHARD FRUIT (BUSHELS)						
Bearing— Apples	15,596	6,751,600	433	14,487	7,138,000	493
Apricots	483	38,619	80	261	29,000	111
Pears	1,429	501,800	351	1,175	451,000	384
Plums and Prunes ..	75	15,712	211	27	6,000	222
Other	90	..	..	56	..	..
Non-bearing Areas ..	2,574	..	..	3,983	..	..
SMALL FRUIT (LB)						
Bearing— Currants (Black and Red)	829	2,775,000	3,348	590	2,638,000	4,474
Gooseberries.. ..	34	282,000	8,304	20	138,000	7,077
Loganberries.. ..	161	1,034,000	6,420	125	628,000	5,024
Raspberries	760	3,882,000	5,111	484	2,629,000	5,431
Strawberries	75	288,000	3,866	67	203,000	3,025
Non-bearing Areas ..	187	..	..	157	..	..

(a) Production includes seed harvested from areas sown to oats for grain; this seed is excluded from the average yield figures.

(b) Non-bearing area excluded; production expressed in dry weight.

(c) Ex-shell weight.

Summary of Principal Crops

The following tables, which summarise the area of selected principal crops and give details of production for recent years, illustrate: (i) the increasing importance of cereal grain crops, green peas and french and runner beans for processing and the hay crop to the agricultural industry; (ii) the declining importance of potatoes, field peas and small fruit.

Selected Principal Crops—Area and Production

Crop	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
AREA (ACRES)						
Barley for Grain	9,333	15,479	19,907	21,057	24,051	26,214
Oats for Grain	20,199	28,086	28,290	35,909	35,371	31,434
Wheat for Grain	6,438	16,805	14,107	12,747	12,018	17,394
Hay	153,822	180,256	147,828	203,181	178,838	210,563
Field Peas	8,505	7,545	7,866	5,982	5,562	5,606
Grass Seed	4,085	9,013	3,110	5,136	2,385	4,496
Hops, Bearing	1,430	1,475	1,491	1,468	1,502	1,521
Beans, French and Runner	163	470	606	970	1,041	1,666
Peas, Green—						
For Processing	7,145	14,995	15,907	15,221	14,877	14,014
Sold in Pod	334	215	133	83	67	96
Potatoes	16,186	9,393	11,993	10,278	10,960	11,461
Orchards, Bearing—						
Apples	16,435	15,532	15,454	15,235	14,945	14,487
Pears	1,476	1,469	1,435	1,398	1,220	1,175
Currants (Black & Red)	817	875	765	695	548	590
Loganberries	212	124	108	139	94	125
Raspberries	1,024	703	651	577	452	484
Strawberries	85	70	74	67	66	67
PRODUCTION						
Barley for Grain .. bushels	294,634	529,377	683,827	771,750	884,222	884,067
Oats for Grain .. bushels	490,633	520,470	676,739	947,960	1,013,665	582,910
Wheat for Grain .. bushels	163,660	364,161	368,351	385,243	316,288	410,263
Hay tons	302,075	364,356	257,237	436,907	309,099	494,227
Field Peas bushels	174,256	190,376	148,576	151,828	119,345	128,841
Grass Seed cwt	7,800	19,934	5,316	11,702	5,373	14,604
Hops (a) '000 lb	3,384	2,088	3,069	2,091	3,005	3,488
Beans, French and Runner						
'000 lb	452	3,873	5,548	8,127	8,792	13,769
Peas, Green (b)—						
For Processing .. '000 lb	14,645	51,383	51,114	56,689	53,926	54,266
Sold in Pod .. '000 lb	387	255	153	101	79	135
Potatoes tons	85,900	57,062	76,400	73,300	79,058	72,120
Apples '000 bushels	4,983	6,207	8,364	6,301	7,943	7,138
Pears '000 bushels	433	490	650	404	511	451
Currants (Black & Red)						
'000 lb	3,337	2,300	2,936	2,715	2,160	2,638
Loganberries .. '000 lb	1,528	623	675	681	511	628
Raspberries .. '000 lb	5,535	3,374	3,502	3,240	2,502	2,629
Strawberries .. '000 lb	487	317	218	262	241	203

(a) Dry weight.

(b) Ex-shell weight.

Principal Crops

The data on acreage and production of crops are compiled, in general, to give totals for each municipality. In subsequent parts of this chapter dealing with geographical distribution, the information is presented only in Statistical

Divisions; however, the component attributable to the North Central and Western Divisions (i.e. the City of Launceston and the western mining districts) is so small that they are not incorporated in the table below. Also, in the following tables, the Hobart Division has been combined with the Southern, since the aim is to give the distribution in broad outline and not in detail. (The description of Statistical Divisions is contained in Chapter 2.)

Cereals for Grain

The next table shows the geographical distribution of cereal grain growing:

**Cereals for Grain—Area of Crops in Statistical Divisions, 1968-69
(Acres)**

Cereals for Grain	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Total
Barley	7,943	1,874	6,469	2,033	6,117	1,779	26,214
Oats	1,942	2,776	11,923	10,596	3,063	1,134	31,434
Rye .. ..	..	..	18	7	8	..	33
Wheat	1,198	967	4,907	6,240	2,993	1,090	17,394
Total	11,082	5,617	23,317	18,876	12,180	4,003	75,074

The area under barley and oats grain crops has tended to increase in recent years, 1958-59 acreages being barley, 9,333; oats, 22,199. In 1963-64 the area under wheat for grain was 17,562 acres, the largest area since 1937-38. From 1963-64 to 1967-68, the area of wheat declined progressively to 12,018 acres, but in 1968-69 it increased again to 17,394 acres.

Hay and Green Feed

The following table shows the geographical distribution of hay and green feed crops:

**Hay and Green Feed—Area of Crops in Statistical Divisions, 1968-69
(Acres)**

Crop	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Hay—								
Grass and								
Clover ..	94,367	40,337	34,062	10,590	1,871	10,095	118	191,439
Oaten ..	4,619	2,487	3,721	2,287	1,426	704	6	15,249
Other ..	888	462	450	1,059	733	283	..	3,875
Total Hay	99,875	43,285	38,232	13,936	4,030	11,081	124	210,563
Green Feed ..	28,978	26,722	18,230	19,932	11,194	6,491	10	111,555

It should be noted that the grass and clover hay area in the table (191,439 acres) relates to hay produced by mowing sown pasture. Reference to a previous section *Definition of 'Sown Pastures'*, which gives details of the geographic distribution of sown pastures, indicates that the North Western Division has the largest area used in this way and is therefore in the best position to produce hay.

The predominance of the North Western Division in acreage under hay and green feed crops can be related to the fact that it carries almost half of the State's cattle and is the principal dairying area.

The chief sources of green feed are areas sown to oats (usually about 50 to 60 per cent of total green feed acreage) and areas of grasses and clovers cut from sown pasture (11.4 per cent in 1968-69); other green feed crops are obtained from chou moellier, barley, lucerne, millet, rape, ryecorn and wheat.

Vegetables for Human Consumption

As previous acreage and production tables indicated, there has been a decline in potato growing; the next table traces the history of this crop over the last one hundred years:

Potatoes—Area Under Crop and Total Production, Selected Years

Year	Area	Production		Year	Area	Production	
		Total	Yield Per Acre			Total	Yield Per Acre
	acres	tons	tons		acres	tons	tons
1860-61 ..	7,621	33,589	4.41	1930-31 ..	37,229	95,289	2.56
1870-71 ..	9,823	36,028	3.41	1940-41 ..	37,364	114,041	3.05
1880-81 ..	10,421	32,548	3.12	1944-45 (a)	81,092	345,232	4.26
1890-91 ..	20,133	73,158	3.63	1950-51 ..	31,581	124,000	3.93
1900-01 ..	23,068	93,862	4.07	1960-61 ..	10,875	39,050	3.59
1910-11 ..	26,230	70,090	2.67	1967-68 ..	10,960	79,058	7.21
1920-21 ..	32,000	88,679	2.77	1968-69 ..	11,461	72,120	6.29

(a) Peak acreage and production year.

Potato growing was for many years a major activity in the North Western Statistical Division and even in 1968-69, 82 per cent of the acreage and 85 per cent of the production of the State's potato crop was located in that area. The size of the Tasmanian potato crop has always been influenced by the demand from other States, in particular, New South Wales. In 1951-52, over one hundred thousand tons were exported; annual exports from 1964-65 to 1967-68 ranged between 26,000 and 35,000 tons but in 1968-69 they were only slightly over 14,000 tons. The considerably increased yield per acre in recent years has been due mainly to the greater use of irrigation and artificial fertilisers. In 1967-68, 54 per cent of the State potato crop was irrigated compared with only 3 per cent ten years earlier. (See 'Technical Aspects of Rural Industry' later in this chapter.)

The decline in the export crop has been largely offset by increased opportunities for disposing of other vegetable crops to dehydrating, canning and deep-freezing plants developed on the North-West coast and in the Scottsdale area since World War II. The main crop now grown for processing is green peas, its area in 1968-69 exceeding the area planted to potatoes (14,014 acres as against 11,461 acres); a demand by processing plants also exists for other vegetables. In 1968-69, 1,666 acres of french and runner beans were grown compared with only 163 acres ten years earlier. The production from all but 20 acres of the 1968-69 crop was for processing factories.

The concentration of vegetable-growing in certain areas of the State is illustrated in the following table:

Vegetables for Sale for Human Consumption (a)
Area Under Selected Crops in Statistical Divisions, Season 1968-69
(Acres)

Crop	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Beans, French and Runner	1,601	46	8	..	2	10	..	1,666
Peas, Green ..	11,201	950	1,904	1	16	40	..	14,110
Potatoes ..	9,387	820	68	594	181	401	10	11,461
All Other Vegetables ..	1,122	610	87	49	132	539	5	2,544
Total ..	23,312	2,426	2,066	644	330	988	15	29,781

(a) Includes vegetables for processing.

Grass Seed

The geographical distribution (in acres) of areas yielding grass seed in 1968-69 was as follows: North Western, 659; North Eastern, 236; North Midland, 3,215; Midland, 301; South Eastern, 37; Hobart and Southern combined, 48; total 4,496. The area of grass seed fluctuates widely depending on farming conditions; in 1964-65, 9,013 acres yielded seed while in 1967-68, only 2,385 acres were harvested.

Field Peas and Vegetables for Stock Feed

The geographical distribution of these crops is shown as follows:

Field Peas and Vegetables for Stock Feed
Area of Crops in Statistical Divisions, 1968-69
(Acres)

Crop	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Field Peas—								
Blue ..	474	70	2,783	..	26	2	..	3,355
Grey and Other ..	600	113	918	93	466	62	..	2,252
Vegetables for Stock Feed—								
Turnips ..	6,627	7,157	2,323	7,519	2,006	792	18	26,441
Other ..	58	97	45	8	60	24	..	292

Hops

The principal industrial crop is hops grown mainly in the Derwent Valley in the municipalities of New Norfolk and Hamilton. In 1968-69, the State's hop-bearing area was 1,521 acres.

Hop production reached a record level of 3,488,000 lb in 1968-69 and, for the first time, some growers experienced difficulties in disposing of their crop. As a result of these difficulties, some farmers in 1970 reduced hop acreages, a small number 'grubbed out' their entire area of hops, while many others failed to completely harvest their crops. This resulted in a drop in production to 2,796,000 lb for the 1970 season. In recent years, new hop varieties have been progressively introduced and their higher average yield and greater resin content has meant that production has exceeded demand.

Tasmania has for many years been the principal Australian grower of hops, producing about 70 per cent of the crop. However, increased production in Victoria in recent years has further aggravated marketing problems for Tasmanian growers.

Orchard Fruit and Small Fruit

The geographical distribution of orchards and small fruit areas is shown below:

**Area of Orchard Fruit and Small Fruit (Bearing and Non Bearing)
in Statistical Divisions, 1968-69
(Acres)**

Fruit	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Orchard Fruit	970	3,564	6	3	370	15,077	..	19,989
Small Fruit ..	4	16	1	195	18	1,209	..	1,442

Orcharding is heavily concentrated in and around the Huon Valley (Southern Statistical Division); the other main area is in the Tamar Valley (North Eastern Division). Small-fruit growing is almost entirely confined to the Derwent and Huon Valleys.

On the average over recent years, the value of the apple crop alone has represented one-third of the gross value of the State's total agricultural production. The next table gives recent details of area, production and average yield:

Apples—Area and Production

Year	Area		Number of Trees		Production		
	Bearing	Non-Bearing	Bearing	Non-Bearing	Total	Yield	
						Per Acre	Per Tree
	acres	acres	'000	'000	'000 bush	bush	bush
1964-65	15,532	2,543	2,310	378	6,207	400	2.70
1965-66	15,454	2,935	2,266	430	8,364	541	3.69
1966-67	15,235	3,305	2,257	490	6,301	414	2.79
1967-68	14,945	3,433	2,228	512	7,943	531	3.56
1968-69	14,487	3,672	2,191	555	7,138	493	3.26

After World War I, apple acreage was 26,000 acres but the decline in area since then has been more than offset by greatly increased average yield per acre. The higher yields can be attributed to several factors including the greater use of irrigation. In the last decade the irrigated area of orchard and small fruit has increased from 7 to 38 per cent of the total crop.

In the 1967-68 season, devaluation of sterling threatened to reduce the return to overseas exporters and the Commonwealth Government outlined a scheme in May 1968, the main provision being 50 cents devaluation compensation for each bushel of apples exported and 53 cents for each bushel of pears exported. The compensation was continued for the 1968-69 season, but at the reduced rate of 40 cents per bushel for both apples and pears.

Production of small fruits in the State has dropped by two-thirds over the last 20 years. In spite of this, Tasmania's proportion of the 1968-69 Australian total production of small fruit was 44 per cent; for raspberries and black and red currants, it was 95 per cent. Part of the 1967-68 production decline, shown in the following table, is attributable to the 1967 bush fires in Southern Tasmania. In 1968-69, production of each kind of small fruit (except strawberries) increased, but did not reach the 1966-67 pre-bushfire level.

Principal Small Fruits—Area and Production

Year	Currants (Black & Red)		Loganberries		Raspberries		Strawberries	
	Bearing Area	Pro- duction	Bearing Area	Pro- duction	Bearing Area	Pro- duction	Bearing Area	Pro- duction
	acres	'000 lb	acres	'000 lb	acres	'000 lb	acres	'000 lb
1948-49 (a) ..	2,006	6,030	213	837	2,086	7,603	250	871
1964-65 ..	875	2,300	124	623	703	3,374	70	317
1965-66 ..	765	2,936	108	675	651	3,502	74	218
1966-67 ..	695	2,715	139	681	577	3,240	67	262
1967-68 (b) ..	548	2,160	94	511	452	2,502	66	241
1968-69 ..	590	2,638	125	628	484	2,629	67	203

(a) Representative year from period when small fruit areas were at record level.

(b) Part of 1967-68 decline due to bush fires in Southern Tasmania.

The following table shows trees planted during 1968 and 1969 in : (i) new orchard areas; (ii) existing orchard areas as replacements for trees removed.

Apple and Pear Trees Planted according to Variety

Variety	Number of Trees Planted					
	1968			1969		
	In Existing Orchards (a)	In New Orchards	Total	In Existing Orchards (a)	In New Orchards	Total
Apples—						
Jonathan ..	1,375	..	1,375	275	320	595
Sturmer Pippin ..	1,674	370	2,044	462	140	602
Democrat ..	7,636	5,495	13,131	3,946	6,140	10,086
Granny Smith ..	8,022	6,950	14,972	7,551	8,774	16,325
Cleopatra ..	592	..	592	155	..	155
Golden Delicious ..	4,474	6,386	10,860	5,531	7,789	13,320
Red Delicious ..	6,709	5,106	11,815	8,352	10,543	18,895
Other	4,069	2,951	7,020	2,644	2,645	5,289
Total ..	34,551	27,258	61,809	28,916	36,351	65,267
Pears—						
Packhams Triumph ..	628	300	928	681	100	781
Winter Cole ..	312	..	312	134	..	134
Beurre Bosc ..	66	..	66	16	..	16
Other	174	..	174	80	..	80
Total ..	1,180	300	1,480	911	100	1,011

(a) Trees planted as replacements for trees removed.

Figures for the last three years indicate a trend towards greater density of trees per acre; 184 trees per acre in 1967, 200 in 1968 and 252 in 1969.

'All Other Crops'

In the table 'Area of Principal Crops' the item 'All Other Crops', (1,921 acres in 1968-69) includes oil poppies, lavender, flower seeds, cut flowers, a variety of crops grown for seed, and green manure crops (e.g. lupins).

LIVESTOCK**Introduction**

This subject is dealt with in two parts: (i) Number of Livestock on Rural Holdings; (ii) Livestock Products.

The first part needs no definition but the second part (livestock products) requires explanation. In relation to the various types of livestock, the following products are included:

Cattle—meat, milk, butter, cheese. *Sheep*—meat, wool.

Pigs—meat.

Poultry—meat, eggs.

Butter and cheese, although regarded as secondary industry products, are included in the section 'Livestock Products' which follows later in the Chapter because the pattern and scale of livestock farming is closely linked to the processing of these products.

Number of Livestock on Rural Holdings

The following summary table shows the numbers of livestock on rural holdings since 1860:

Livestock on Rural Holdings—Selected Years

Year	Horses	Cattle	Sheep	Pigs
	no.	no.	'000	no.
1860 (a)	21,034	83,366	1,701	31,290
1870	22,679	101,459	1,350	49,432
1880	25,267	127,187	1,794	48,029
1890	31,165	162,440	1,619	81,716
1900	31,607	165,516	1,684	68,291
1910	41,388	201,854	1,788	63,715
1919-20	39,452	214,442	1,781	35,530
1929-30 (b) ..	34,336	214,643	2,091	52,899
1939-40 (b) ..	29,605	252,484	2,677	44,941
1949-50 (c) ..	21,197	274,740	2,170	35,841
1959-60	10,512	375,342	3,494	67,118
1967-68	n.a.	563,726	4,428	86,517
1968-69	n.a.	585,718	4,395	95,363
1968-69—Tasmanian numbers as proportion of Australian total ..	n.a.	2.8 per cent	2.5 per cent	4.2 per cent

(a) At varying dates to 1919-20.

(b) At 31 December.

(c) At 31 March from 1949-50.

Cattle*Classification*

The traditional way of classifying cattle has been to call them either 'dairy' or 'beef' cattle, but this has possibly been confusing since the terms may refer either to *purpose* or *breed*. In the period 1942-43 to 1962-63, the annual farm census required this dissection but the terms were not defined. In 1963-64, the cattle questions were amended as follows: (i) bulls were to be classified by *breed*; (ii) 'house cows' were to be specified separately; (iii) all other cattle were to be classified according to *purpose*, i.e. milk production or meat production. The results of the 1968-69 farm census are given, the table showing

the way in which the questions were asked and providing an analysis in which it is possible to isolate the number of cows and heifers *directly* associated with dairying (i.e. the fifth, sixth and seventh items on the collection form).

Description of Cattle on Rural Holdings, 31 March 1969
(Form Used for Collection)

Cattle and Calves Number at 31 March 1969	Bulls used or intended For Service	Bulls (1 year and over)—Dairy Breeds Beef Breeds Bull Calves (under 1 year)— Dairy Breeds Beef Breeds	3,221 6,828 1,587 2,337
	Cows and Heifers used or intended for production (for sale) of Milk and Cream	Cows—In Milk and Dry at 31 March.. Heifers (1 year and over) Heifer Calves (under 1 year)	152,894 43,257 38,987
	House Cows (in milk and dry) and Heifers (one year and over) being kept primarily for own milk supply		5,042
	Other Cattle and Calves (not included above) i.e. mainly for Meat Production	Cows and Heifers (1 year and over) .. Calves (under 1 year) including Vealers Other (1 year and over) i.e. Steers, Bullocks, etc.	150,492 123,693 57,380
	Total Cattle and Calves for all Purposes ..		585,718

The total of 'Cows and Heifers used or intended for production (for sale) of Milk and Cream' in the previous table (235,138) can be associated directly with the dairying industry. Similarly the total of 'Other Cattle and Calves, i.e. mainly for Meat Production, (331,565) can be associated directly with the beef cattle industry. Between 1964 and 1969 there was an increase of 60 per cent in the numbers associated with the beef cattle industry and only a five per cent increase in the dairying industry. Preliminary estimates for 1969-70 indicate very little change in dairy cow numbers, but another substantial increase in cattle for meat production.

The previous change in classification makes it impossible to compare, in full detail, the description of cattle in 1963-64 and subsequent years with descriptions reported in previous years but the following table is compiled to show broad groups regarded as generally comparable:

Description of Cattle on Rural Holdings

Year (a)	Number of Holdings with Cattle	Bulls (1 year & over)	Cows and Heifers (1 year & over)	Calves (Under 1 year)	Other Cattle	Total Cattle
1950	9,759	6,186	158,424	60,601	49,529	274,740
1955	9,668	(b) 7,002	194,016	78,252	40,147	319,417
1960	9,031	7,237	229,162	100,849	38,094	375,342
1964	8,547	8,125	276,190	122,385	43,298	449,998
1965	8,384	8,311	283,955	119,455	39,750	451,471
1966	8,667	8,816	298,954	141,536	42,611	491,917
1967	8,598	9,094	315,316	145,928	51,326	521,664
1968	8,631	9,660	331,451	162,460	60,155	563,726
1969	8,545	10,049	351,685	166,604	57,380	585,718

(a) At 31 March.

(b) The specification of 'Bull Calves (under 1 year)' from 1963-64 may have affected the comparability of this figure.

The distribution of holdings with cattle is shown below:

Cattle on Rural Holdings in Statistical Divisions, 31 March 1969

Particulars	North Western	North Eastern	North Mid-land	Mid-land	South Eastern	Hobart and Southern	Rest of State	Total
Holdings with Cattle	3,659	1,477	790	500	480	1,619	20	8,545
Total Cattle (All Descriptions) ..	285,766	123,655	63,642	51,822	16,011	43,420	1,402	585,718
Cows in Milk and Dry (a) ..	104,579	26,427	11,013	2,678	1,832	6,350	15	152,894
Heifers (1 year and over) (a) ..	28,018	7,577	3,492	1,102	735	2,329	4	43,257
Heifer Calves (under 1 year) (a) ..	25,856	6,786	3,321	600	560	1,855	9	38,987
Total (a) ..	158,453	40,790	17,826	4,380	3,127	10,534	28	235,138
Bulls (1 yr & over)—								
Dairy Breeds ..	2,113	541	316	49	70	130	2	3,221
Beef Breeds ..	2,434	1,566	943	970	268	631	16	6,828

(a) 'Cows and heifers used or intended for production (for sale) of milk and cream'. The total (235,138) can be associated directly with the dairying industry.

Breeds of Cattle

The main breeds of dairy cattle in Tasmania are Jersey, Friesian and Ayrshire with small numbers of milking Shorthorn and Guernsey, while beef breeds are Hereford, Aberdeen Angus, Shorthorn and Devon.

A recent development, associated with the trend in the beef industry towards the production of lean carcasses, is the production of meat from dairy breed calves. Dairy farmers retain male calves and, in some cases, heifer calves for sale as vealers (calves aged from nine to twelve months). The dairy breed best suited for this form of meat production is the Friesian with its high birthweight (8½ to 9½ lb) and inherent ability to make rapid live-weight gains. Farmers rearing calves from dairy herds for sale as meat vealers normally mate their cows to Friesian or to recognised beef breed bulls. In recent years, new cattle lines such as the Brahmans and Murray Greys have been introduced by farmers wishing to utilise the advantages of cross-breeding.

Sheep

The table below shows how sheep numbers have more than doubled since the end of World War II.

Sheep on Rural Holdings At 31 March ('000)

Year	Sheep	Year	Sheep	Year	Sheep	Year	Sheep
1946 ..	1,926	1952 ..	2,338	1958 ..	3,298	1964 ..	3,600
1947 ..	1,933	1953 ..	2,422	1959 ..	3,536	1965 ..	3,793
1948 ..	2,087	1954 ..	2,465	1960 ..	3,494	1966 ..	4,127
1949 ..	2,160	1955 ..	2,595	1961 ..	3,439	1967 ..	4,321
1950 ..	2,170	1956 ..	2,673	1962 ..	3,532	1968 ..	4,428
1951 ..	2,182	1957 ..	2,943	1963 ..	3,570	1969 ..	4,395

The next table shows the geographical distribution of sheep, also the various descriptions and details of the lambing season:

Description of Sheep at 31 March 1969 and Lambing, Season 1968, in Statistical Divisions

Particulars	North West- ern	North East- ern	North Mid- land	Midland	South East- ern	Hobart and ern South-	Rest of State	Total
Holdings with Sheep	1,476	937	753	632	609	683	7	5,096
Sheep—								
Rams (1 year and over) ..	7,500	8,079	12,214	14,357	5,888	2,183	5	50,226
Breeding Ewes ..	305,065	351,755	428,027	564,309	261,973	112,130	208	2,023,467
Other Ewes (1 year and over) ..	12,100	31,517	38,609	59,766	22,719	9,381	189	174,281
Wethers (1 year and over) ..	46,897	160,361	192,837	422,076	158,714	60,437	14	1,041,336
Lambs and Hoggets (under 1 year) ..	158,811	185,504	224,103	348,404	135,809	52,540	19	1,105,190
Total ..	530,373	737,216	895,790	1,408,912	585,103	236,671	435	4,394,500
Lambing, Season 1968—								
Ewes Mated ..	261,226	296,196	355,750	482,871	241,824	97,490	243	1,735,600
Lambs Marked—								
Number ..	251,083	259,395	319,830	427,587	213,232	89,592	179	1,560,898
Marking Ratio (a) ..	96.1	87.6	89.9	88.6	88.2	91.9	73.7	89.9

(a) Lambs marked as percentage of ewes mated; lamb mortality is one of the factors affecting marking ratios.

Lambing Mortality

Lambing losses are related to: (i) weather conditions; (ii) mis-mothering and ewe mortality; (iii) the nature of the lamb's coat at birth; and (iv) diseases including goitre (which is being intensively studied).

The number of holdings with sheep peaked at 5,950 in 1960, and declined to 5,098 by 1969. At the same time the number of sheep increased indicating a trend towards larger flocks as shown in the next table:

Rural Holdings With Sheep Classified According to Size of Sheep Flock (a)

Size of Sheep Flock	1956	1960	1966	1969
1-49	1,404	1,490	1,295	1327
50-99	766	730	559	527
100-199	872	893	709	674
200-299	505	528	479	400
300-399	320	398	308	283
400-499	238	303	234	198
500-699	329	416	346	349
700-999	261	338	308	276
1,000-1,399	186	254	266	257
1,400-1,999	146	204	239	226
2,000-2,999	139	167	221	232
3,000-4,999	101	124	159	172
5,000-9,999	45	81	119	125
10,000-19,999	14	19	30	44
20,000 and Over	3	5	4	6
Total	5,329	5,950	5,276	5,096

(a) Classifications taken only at irregular intervals.

The following table summarises the descriptions of sheep on a State basis and also gives details of lambing:

Description of Sheep at 31 March and Details of Lambing—Summary

Particulars	1959	1964	1965	1966	1967	1968	1969
Holdings with Sheep ..	5,926	5,255	5,114	5,276	5,224	5,294	5,096
Sheep ('000)—							
Rams (1 year and over)	42	41	43	45	47	49	50
Breeding Ewes ..	1,573	1,567	1,739	1,826	1,997	1,954	2,023
Other Ewes (1 year and over) ..	206	193	157	172	164	203	174
Wethers (1 year and over) ..	840	890	943	951	1,022	1,072	1,041
Lambs and Hoggets (under 1 year) ..	875	909	910	1,133	1,090	1,150	1,105
Total	3,536	3,600	3,792	4,127	4,321	4,428	4,395
Lambing (a)—							
Ewes Mated .. ('000)	1,381	1,458	1,478	1,651	1,688	1,779	1,736
Lambs Marked—							
Number .. ('000)	1,269	1,353	1,374	1,594	1,574	1,522	1,561
Marking Ratio (b)	91.9	92.8	93.0	96.5	93.3	85.6	89.9

(a) In the season preceding the year named.

(b) Lambs marked as percentage of ewes mated.

Breeds of Sheep

The Merino is the mainstay of the Australian wool industry and accounts for over 75 per cent of the Australian sheep population. However, in Tasmania the predominant sheep breeds are Polwarth and Corriedale; both were originally developed from Merino cross-breeds. A new sheep breed, the 'Cormo', has been developed in Tasmania to suit local conditions. The aim is to produce a highly-fertile breed having a high yield of fine wool and good body conformation.

Over the last ten years, the breeds of sheep reported by growers have shown a trend in favour of Polwarths. Corriedale numbers, after showing a small but consistent increase for some years, are now exhibiting an opposite trend. The following table shows the percentage of the main breeds of sheep (including rams):

**Proportion of Breeds of Sheep at 31 March
(Per Cent)**

Breed	1959	1964	1965	1966	1967	1968	1969
Polwarth	29.8	36.7	38.6	39.3	39.9	40.5	41.7
Corriedale	14.7	16.3	17.8	18.6	19.5	18.0	17.3
Merino	9.2	9.7	9.3	8.7	8.0	7.1	7.7
Romney Marsh ..	2.5	2.3	2.2	2.1	2.2	2.0	1.9
Other Breeds (a) ..	5.0	3.5	3.3	3.4	3.0	3.0	3.3
Comebacks	13.2	12.2	11.1	10.0	10.5	10.7	11.1
Crossbreeds	25.6	19.3	17.7	17.9	17.0	18.7	17.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Recognised breeds of sheep which individually, in 1969, accounted for less than one per cent of all sheep; includes Cheviot, Dorset Horn, Border Leicester, English Leicester, Ryeland, Southdown, Suffolk, Lincoln, Poll Dorset and Shropshire.

The majority of all breeds of sheep are run on improved pastures. However, particularly in the Midlands, use is made of considerable areas of unimproved 'run' country for Polwarths, Comebacks and Merinos. The Central Plateau also provides summer grazing, particularly for wethers.

Pigs

The geographical distribution of pigs, by statistical division is shown in the next table:

Distribution of Pigs in Statistical Divisions at 31 March 1969

Particulars	North West- ern	North East- ern	North Mid- land	Mid- land	South East- ern	Hobart and South- ern	Rest of State	Total
Holdings with Pigs ..	1,187	531	227	93	106	251	5	2,400
Pig Numbers—								
Boars	1,170	410	179	30	60	149	3	2,001
Breeding Sows ..	8,869	3,071	1,281	193	495	1,287	17	15,213
Other (a)	46,832	16,150	6,771	757	1,533	6,024	82	78,149
Total Pigs ..	56,871	19,631	8,231	980	2,088	7,460	102	95,363

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

The concentration of pigs in the North Western Statistical Division has been related to the fact that this is the main dairying area and that pig-raising has traditionally been associated with dairying. This association still exists but pigs are usually no longer a sideline on dairy farms. Since the advent of bulk milk collection, the dairyman has had an alternative market for skim milk: thus, while a steady increase in the pig population has taken place, a decline in the number of pig producers has occurred. On those farms still producing pig meat, pig numbers have increased and in many cases the income from pigs often equals that from cows. A change to the intensive system of pig production, in which all pigs are permanently housed, is now becoming evident.

Pig Population

The pig population at 31 March each year is not, in itself, a very significant figure. It is possible for a sow to produce two litters within the one year and the offspring to number more than ten in each litter. It follows, therefore, that the real measure of activity in pig-raising is not so much the size of the pig herd at a particular point in time but rather the number of pigs slaughtered and the dressed carcass weight of the meat so produced; such information is given in the 'Livestock Products' section of this chapter.

In the previous table, the most significant item is the number of breeding sows. A sow can be mated at nine or ten months and the gestation period is a mere four months. In recent years, there has been a tendency to wean piglets at a much younger age than the traditional eight weeks: this has been made possible by a better knowledge of the nutritional requirements of the young pig. Early weaning calls for more skilled management but has the advantages of avoiding heavy weight loss by the sow and reducing the period between litters.

The following table summarises pig descriptions and pig numbers:

Pigs on Rural Holdings at 31 March

Year	Holdings with Pigs	Boars	Breeding Sows	Other (a)	Total Pigs
1950	<i>n.a.</i>	1,106	5,451	29,284	35,841
1955	4,235	1,608	9,065	47,709	58,382
1960	3,681	2,075	10,730	54,313	67,118
1965	3,315	2,327	14,578	75,116	92,021
1966	3,153	2,143	13,788	80,225	96,156
1967	2,749	1,972	13,148	70,534	85,654
1968	2,545	1,840	13,227	71,450	86,517
1969	2,400	2,001	15,213	78,149	95,363

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

LIVESTOCK PRODUCTS

Value of Production

The statistics in the following section refer, in the main, to quantities of livestock products. The associated values will be found under 'Value of Production' in Chapter 7.

Wool

In a report in 1836, the Colonial Secretary, John Montagu, described the early export trade in wool: 'It appears that the quantity of Wool imported into England from N.S.W. and Van Diemen's Land in 1810 was 167 lbs; in 1820, it amounted to 99,415 lbs; in 1825, to 323,995 lbs. From 1827, the returns for the two Colonies are separated.' The report then quotes the following exports of wool from the island colony:

**Exports of Greasy Wool—Report of John Montagu
(lb)**

Year	Quantity	Year	Quantity	Year	Quantity
1827	192,075	1830	993,979	1833	1,547,201
1828	528,846	1831	1,359,203	1834	1,601,280
1829	925,320	1832	951,131	1835	1,942,800

Prices in 1824 varied from two and a half cents to five cents per lb but, by 1836, they had increased to range from 15 to 25 cents. The progress of wool production in the remainder of the 19th century can be gathered from the following table (compiled from export figures, since production details were not collected for the whole period):

**Exports of Wool (a) (Overseas and Interstate)—Historical Summary
(⁰⁰⁰ lb)**

Year	Quantity	Year	Quantity	Year	Quantity
1835	(b) 2,429	1860	4,538	1885	5,774
1840	3,637	1865	4,924	1890	8,984
1845	3,662	1870	4,147	1895	7,223
1850	5,855	1875	6,199	1900	6,754
1855	5,858	1880	9,025	1905	9,566

(a) The figures relate basically to greasy wool but a small proportion of washed wool is included in the later years.

(b) An amendment of Montagu's original figure.

Unfortunately the above series cannot be carried through the period 1910-1922 due to lack of interstate trade figures, or through the period 1922-1951 because 'pure' greasy wool export figures (i.e. separated from scoured wools and tops and noils) are not available. Recent exports are:

Exports of Wool, Greasy (Overseas and Interstate)
(*000 lb)

Year	Quantity	Year	Quantity	Year	Quantity
1954-55 ..	17,663	1959-60 ..	27,977	1964-65 ..	30,329
1955-56 ..	18,491	1960-61 ..	24,403	1965-66 ..	34,376
1956-57 ..	20,707	1961-62 ..	27,209	1966-67 ..	35,802
1957-58 ..	23,659	1962-63 ..	26,278	1967-68 ..	30,854
1958-59 ..	25,167	1963-64 ..	25,086	1968-69 ..	34,830

It should be noted, however, that not all Tasmanian wool is exported, some being used, after scouring, etc., for manufacturing purposes within the State; any locally processed wool exported would not be classified under greasy wool.

Wool Production

For statistical purposes, the total amount of wool produced in the State in any year consists not only of the 'clip' (shorn wool) but also of the wool on skins, irrespective of whether it is actually removed by local fellmongers or is exported on skins. Production figures follow:

Wool Production Since 1957-58
(*000 lb)

Year	Wool as in the Grease			Year	Wool as in the Grease		
	Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool Exported on Skins	Total		Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool Exported on Skins	Total
1957-58	26,110	3,065	29,175	1963-64	29,597	4,410	34,007
1958-59	28,892	3,742	32,634	1964-65	35,619	4,052	39,671
1959-60	29,091	4,509	33,600	1965-66	36,948	4,910	41,858
1960-61	27,881	3,989	31,870	1966-67	38,687	4,466	43,153
1961-62	30,039	4,430	34,469	1967-68	33,700	4,608	38,308
1962-63	30,318	4,243	34,561	1968-69	41,789	5,167	46,956

In the previous tables dealing with exports, a gap exists between 1905 and 1950-51 but production statistics are available as follows:

Total Wool Production—Historical Summary
(*000 lb)

Year	Production of Wool (as in the Grease) (a)	Year	Production of Wool (as in the Grease) (a)	Year	Production of Wool (as in the Grease) (a)
1905 ..	11,753	1929-30	15,000	1954-55	23,797
1910 ..	13,339	1934-35	14,035	1959-60	33,600
1914-15 ..	12,049	1939-40	18,334	1964-65	39,671
1919-20 ..	13,069	1944-45	16,324	1967-68	38,308
1924-25 ..	12,483	1949-50	16,958	1968-69	46,956

(a) Total wool production, including shorn, dead and fellmongered wool and wool exported on skins; fellmongered converted to greasy wool equivalent weight.

'Wool as in the Grease'

The above term indicates that fellmongered wool included in previous total production figures has been attributed a weight as though it were *greasy* wool, although the original information is received in terms of the weight of *scoured* wool recovered by fellmongering. The method of conversion is simple: if 100 lb of *greasy* yields 60 lb of *clean*, and 100 lb of *scoured* (fellmongered) yields 80 lb of *clean*, it follows that 100 lb of *scoured* (fellmongered) is equivalent to 133 lb of *greasy*. The factors in the example are only approximations of those in actual use, which are obtained from woolscourers (*greasy/clean* relativity) and fellmongers (*scoured/clean* relativity). Conversion of such wool to a greasy wool equivalent is necessary to put all the components of total production on a common basis.

Shorn Wool

The principal months for shearing in Tasmania are October, November and December, but during the last two or three years an increasing number of farmers have been shearing outside the traditional spring period. Such practices facilitate flock and property management as well as providing more continuous employment for shearers and shed hands. The following table gives shearing details for recent years:

Shearing and Shorn Wool Obtained

Year Ended 31 March	Numbers Shorn			Shorn Wool Obtained			Average Yield		
	Sheep	Lambs	Total	From Sheep (a)	From Lambs	Total	From Sheep (a)	From Lambs	Total
	'000	'000	'000	'000 lb	'000 lb	'000 lb	lb	lb	lb
1959	2,890	783	3,673	27,081	1,811	28,892	9.37	2.31	7.87
1965	3,171	807	3,978	33,752	1,867	35,619	10.64	2.31	8.95
1966	3,339	979	4,318	34,524	2,424	36,948	10.34	2.48	8.56
1967	3,542	975	4,517	36,210	2,477	38,687	10.22	2.54	8.56
1968	3,673	899	4,572	31,648	2,052	33,700	8.62	2.28	7.37
1969	3,703	928	4,632	39,317	2,472	41,789	10.62	2.66	9.02

(a) Includes crutchings from sheep.

The next table shows the geographical distribution of shorn wool production:

Shearing and Shorn Wool Obtained (a) in Statistical Divisions, 1968-69

Particulars	North Western	North Eastern	North Mid-land	Mid-land	South Eastern	Hobart and Southern	Rest of State	Total
Number Shorn—								
Sheep .. '000	369	616	743	1,213	557	204	..	3,703
Lambs .. '000	124	149	197	300	123	34	..	928
Shorn Wool Obtained—								
From Sheep '000 lb	3,678	6,419	8,038	13,712	5,454	2,011	3	39,317
From Lambs '000 lb	462	483	520	673	241	93	1	2,472
Total .. '000 lb	4,140	6,903	8,558	14,385	5,695	2,104	4	41,789
Average Yield—								
Sheep .. lb	9.96	10.41	10.81	11.30	9.79	9.86	9.85	10.62
Lambs .. lb	3.73	3.24	2.63	2.24	1.95	2.73	3.11	2.66

(a) Includes crutchings from sheep.

Wool Auctions

The bulk of Tasmanian shorn wool is marketed in Hobart and Launceston at auctions organised by the wool-selling brokers. Prior to 1969-70, there were three auction sales per year: a four-sale season was introduced for 1969-70 with sales in October, December, February and June. Some wool, however, is bought direct from growers by dealers and by local manufacturers of woollen goods. A small proportion of the State's wool is marketed at Victorian auctions, growers on King Island and Flinders Island tending to use this outlet because of sea transport factors.

Although wool prices have been at a lower level in recent years, the price decline has been more pronounced for wools of 58s count and stronger. Many woolgrowers have therefore decided to produce a finer type of wool resulting in an increasing number of ewes being mated with Merino rams. Local Merino rams have been keenly sought whilst others have been imported from interstate.

The following table shows the average price of shorn greasy wool sold at Tasmanian auctions in selected years since World War II and also the value of all wool produced (the record price in 1950-51 can be related to the Korean War):

Tasmanian Average Auction Price and Total Value of Wool Produced

Year	Average Auction Price per lb of Shorn Greasy Wool	Total Value of Wool Produced (a)	Year	Average Auction Price per lb of Shorn Greasy Wool	Total Value of Wool Produced (a)
	cents	\$'000		cents	\$'000
1946-47 ..	23.00	3,880	1961-62 ..	48.62	15,752
1948-49 ..	46.92	7,530	1962-63 ..	55.12	17,772
1950-51 ..	150.05	24,226	1963-64 ..	67.40	21,352
1952-53 ..	67.42	12,758	1964-65 ..	49.35	19,050
1954-55 ..	63.75	14,464	1965-66 ..	56.20	22,405
1956-57 ..	71.82	19,948	1966-67 ..	50.85	20,983
1958-59 ..	43.99	13,688	1967-68 ..	43.72	15,609
1959-60 ..	51.62	16,508	1968-69 ..	47.90	21,180
1960-61 ..	48.18	14,458			

(a) Includes value of shorn wool, fellmongered and dead wool and estimated value of wool exported on skins. Excludes profits of \$3,201,510 arising from the War-time Wool Disposals Plan and distributed to growers in the period 1949-50 to 1954-55.

The preceding price series refers only to shorn greasy wool sold at auction. In arriving at the value series for all wool produced, account is taken not only of wool sold at auction, but also of direct growers' sales to dealers, manufacturers and fellmongers plus estimated value of wool exported on skins.

Classification of Greasy Wool Sold at Auction

The following information is compiled by the Wool Statistical Service of the Australian Wool Board on the basis of catalogues of auction sales. 'Quality' (64s, 60s, 58s, etc.) is a measure of the fineness of wool for spinning purposes. Broadly, it means the maximum number of hanks of yarn, each of 560 yards in length, which can be spun from one pound of combed wool. For instance, wool of 64s quality is of a fineness and texture which will produce 64 hanks, each of 560 yards, from one pound of tops (combed wool) of that particular wool.

The next table shows, on a percentage basis, the proportion of wool sold at auction according to its predominating quality.

Classification of Greasy Wool Sold at Tasmanian Auctions According to Quality
(Source: Australian Wool Board)

Predominating Quality	Proportion of Each Quality (Per Cent)					
	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
70s and Finer	5.1	4.8	5.2	4.5	5.2	4.9
64/70s	2.5	2.7	2.3	2.4	2.1	2.1
64s	3.5	3.3	3.2	3.1	3.9	2.9
64/60s	0.5	0.6	0.7	0.6	0.7	0.6
60/64s	7.7	7.0	8.7	6.6	9.5	7.2
60s and 60/58s	16.1	15.6	17.3	15.3	17.6	16.3
Total 60s and Finer	35.3	34.0	37.4	32.5	39.0	34.0
58s	24.2	30.5	29.4	31.7	27.4	30.4
56s	21.5	20.6	19.8	20.4	18.2	19.9
50s	11.1	8.8	8.1	9.3	8.3	9.8
Below 50s	4.9	4.3	3.3	3.9	3.6	4.1
Oddments	2.9	1.8	2.0	2.2	3.5	1.8
Total All Wool	100.0	100.0	100.0	100.0	100.0	100.0

Clean Wool Yield

The Tasmanian proportion of auctioned greasy wool classified as '60s and finer' in recent years has ranged from 32 to 44 per cent whereas the corresponding Australian proportion exceeds 70 per cent. In the matter of price, however, the Tasmanian auction average is usually a few cents above the Australian auction average. Tasmanian averages, with Australian equivalents in brackets, have been: 1965-66, 56.02c (50.08c); 1966-67, 50.85c (47.38c); 1967-68, 43.72c (41.75c); 1968-69, 47.90c (44.67c). This apparent contradiction is explained by taking into account a second factor, not included in the foregoing quality analysis, namely the yield of clean wool that can be obtained from greasy wool. In respect of this factor, Tasmanian wools tend to yield higher than Australian, both natural and artificial environmental factors operating to the advantage of the Tasmanian clip. Evidence of this peculiarity of Tasmanian wool is provided in the next table:

Average Clean Yield of Wool Clip, Tasmania and Other Australian States
(Source: Australian Wool Board)

State of Sale (a)	Percentage of Clean Yield from Greasy Wool					
	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
N.S.W.	52.26	56.84	55.86	56.19	55.91	56.52
Victoria	59.11	59.21	58.98	59.72	58.70	59.58
Queensland	55.68	55.70	54.50	54.68	54.68	54.65
S.A.	53.55	53.10	53.07	54.00	52.53	55.14
W.A.	54.05	54.76	54.94	55.55	55.01	56.39
Tasmania	63.25	62.93	62.82	62.99	62.14	63.66
Australia	56.59	56.86	56.38	56.94	56.13	57.10

(a) Wool from other Australian States is not sold at Tasmanian auctions so, for Tasmania, 'State of Sale' and 'State of Origin' are virtually the same except that some King and Flinders Islands' wool is sold at Victorian auctions.

As the above figures suggest, Tasmanian wool is freer from dust and vegetable fault than wool produced in the other States.

While the proportion of fine wool (60s and finer) is comparatively low in the Tasmanian clip (since the State is historically and climatically a producer of crossbred wool), nevertheless growers offering '60s and finer' sell a high proportion of superfine Merino wool at premium prices; this factor also operates to raise Tasmanian average auction prices above the Australian average.

Meat

Slaughtering

An obvious starting point in any description of meat production is the slaughtering of livestock for human consumption. To fully record the level of this activity, statistics should deal with operations in abattoirs, other slaughtering establishments and factories; slaughtering on farms also needs to be taken into account. Information on this complete basis did not become available before 1912, previous statistics relating only to slaughtering in Hobart and Launceston. The following table has been compiled to give an indication of slaughtering activity from 1912 to the present day:

Stock Slaughtered (a) For Human Consumption—Historical Summary ('000)

Year	Cattle and Calves	Sheep and Lambs	Pigs	Year	Cattle and Calves	Sheep and Lambs	Pigs
1912 ..	29	216	16	1954-55 ..	75	643	79
1915 ..	32	309	32	1959-60 ..	145	1,166	115
1924-25 ..	36	276	55	1964-65 ..	174	987	135
1929-30 ..	35	342	64	1965-66 ..	154	1,164	146
1934-35 ..	38	349	51	1966-67 ..	170	1,159	149
1939-40 ..	48	461	73	1967-68 ..	172	1,125	143
1944-45 ..	47	509	58	1968-69 ..	178	1,241	139
1949-50 ..	58	508	51	1969-70 ^p ..	178	1,305	160

(a) In all registered slaughtering establishments and on farms.

The next table, compiled on the same basis, analyses the items 'Cattle and Calves' and 'Sheep and Lambs':

Stock Slaughtered (a) for Human Consumption ('000)

Year	Cattle and Calves				Sheep and Lambs			Pigs
	Bulls, Bullocks & Steers	Cows and Heifers	Calves	Total	Sheep	Lambs	Total	
1958-59 ..	43	49	36	127	363	546	909	107
1963-64 ..	51	71	54	176	545	582	1,127	124
1964-65 ..	53	71	50	174	425	562	987	135
1965-66 ..	47	61	47	154	567	597	1,164	146
1966-67 ..	52	67	51	170	552	607	1,159	149
1967-68 ..	58	66	48	171	600	525	1,125	143
1968-69 (b) ..	68	64	45	178	568	673	1,241	139
1969-70 ^p ..	79	66	33	178	615	690	1,305	160

(a) In all registered slaughtering establishments and on farms.

(b) In 1968-69, the farm component of total livestock slaughtered was: cattle and calves, 592, sheep and lambs, 84,472, pigs, 1,489.

Meat Production

Slaughtering statistics in the previous two tables suggest that meat production has been relatively stable in the last few years; however, statistics of actual carcass weight of stock slaughtered provide a more precise measure of actual meat production and annual trends. The necessary weight data are collected from abattoirs, factories and licensed slaughterhouses (including 'country butchers'); in the case of livestock killed on farms, only the numbers are available and the resulting carcass weight has to be estimated. Statistics in terms of carcass weight cover the same field as the previous tables on slaughtering. The following table shows details since 1924-25:

Production of Meat—Historical Summary
(⁰⁰⁰ Tons—Carcass Weight)

Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat	Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat
1924-25 ..	8.1	5.0	2.5	15.6	1959-60 ..	23.1	20.8	5.4	49.3
1929-30 ..	8.0	6.0	2.8	16.8	1964-65 ..	26.3	18.1	6.6	51.0
1934-35 ..	8.1	6.0	2.3	16.4	1965-66 ..	23.0	21.1	7.0	51.1
1939-40 ..	10.6	7.7	3.5	21.8	1966-67 ..	24.7	20.9	7.2	52.8
1944-45 ..	9.2	9.2	3.0	21.4	1967-68 ..	25.1	19.8	6.9	51.8
1949-50 ..	12.3	8.9	2.6	23.8	1968-69 ..	27.9	22.5	7.0	57.4
1954-55 ..	13.7	11.9	3.4	29.0	1969-70 _p	31.2	23.7	7.8	62.7

(a) Includes pork for manufacture into bacon and ham.

The next table, compiled on the same basis, analyses the items 'Beef and Veal' and 'Mutton and Lamb'.

Production of Meat
(⁰⁰⁰ Tons—Carcass Weight)

Year	Beef and Veal			Mutton and Lamb			Pigmeat (a)	Total Meat
	Beef	Veal	Total	Mutton	Lamb	Total		
1958-59 ..	19.6	0.8	20.4	7.3	9.1	16.4	4.9	41.7
1963-64 ..	24.6	1.3	25.9	10.9	9.2	20.1	5.9	51.9
1964-65 ..	25.4	0.9	26.3	9.1	9.0	18.1	6.6	51.0
1965-66 ..	22.1	0.9	23.0	11.5	9.6	21.1	7.0	51.1
1966-67 ..	23.7	1.0	24.7	11.2	9.7	20.9	7.2	52.8
1967-68 ..	24.1	1.0	25.1	11.5	8.4	19.8	6.9	51.8
1968-69 ..	27.1	0.8	27.9	11.5	10.9	22.5	7.0	57.4
1969-70 _p ..	30.6	0.6	31.2	12.6	11.1	23.7	7.8	62.7

(a) Includes pork for manufacture into bacon and ham.

Export of Meat

As early as 1890, other Australian States were exporting frozen (and later, chilled) lamb, mutton, beef and veal to overseas destinations but the development of a similar meat export trade from Tasmania has been of comparatively recent origin. The first major step was in the field of fat lamb production when the 1931-32 season resulted in approximately 19,000 carcasses being exported overseas; unfortunately the birth of this activity coincided with the economic depression of the 1930s and the attempt to introduce a new line in 'mixed' farming was at first discouraged by low prices. World War II saw a

revival of demand with over 100,000 carcasses exported overseas in 1943-44, and, after something of a decline in the early post-war period, exports climbed to 161,815 carcasses in 1959-60. Statistics of the number of lamb carcasses exported in recent years are not available.

The other major development has been the growth of an export trade in beef and veal, the first shipments overseas commencing in 1954-55. The following are meat export figures expressed in tons. Unfortunately, export weights cannot be directly compared with production weights since the former include boneless meat and meat which has had its fat content reduced, while the latter are in terms of carcass weight.

**Exports of Meat, 1968-69
(Tons)**

Destination	Beef and Veal	Lamb	Mutton	Pork	Offal (Edible)	Bacon and Ham
Interstate	1,093	174	291	1,519	32	188
Overseas	5,050	902	2,647	..	742	..
Total	6,143	1,076	2,938	1,519	773	188

The importance of Tasmania's overseas meat trade can be judged from Australian Meat Board estimates of the percentage of Tasmanian production actually exported. The trend in recent years is shown in the following table:

**Proportion of Tasmanian Meat Production Exported Overseas (a)
(Source: Australian Meat Board)
(Per Cent)**

Type of Meat	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68 <i>r</i>	1968-69
Beef & Veal	8.7	7.7	14.7	20.2	26.1	28.5	24.7	31.5	29.8	30.8
Mutton	6.0	3.2	10.9	17.3	27.8	19.8	39.5	44.1	44.7	48.2
Lamb	23.0	17.7	12.7	13.7	9.5	14.7	12.2	10.8	3.3	8.6

(a) The estimated percentages are derived by converting actual export weights to a carcass weight equivalent, thus giving a basis for comparison with production figures.

Meat Export Works

In 1968-69, there were eight licensed export slaughtering establishments in Tasmania. These were in Launceston (two), Hobart, Devonport, Longford, King Island, Smithton and Sorell.

In broad terms, it is true to say that Tasmania has changed from a meat importing to a meat exporting State and this development can be related to the changed pattern of farming, the most significant indicator being the increase in the area of sown pasture and in the number of livestock carried.

Bacon and Ham

In the tables on meat production, the product from pig slaughtering has been referred to as 'pigmeat'. Approximately 27 per cent of pigmeat was converted in Tasmania to bacon and ham in 1968-69. Considerable quantities of

pigmeat are also exported to other States some of which are converted to bacon and ham. The next table shows the production of bacon and ham since 1939-40 in summary form:

**Production of Bacon and Ham
(Tons)**

Year	Bacon and Ham			Year	Bacon and Ham		
	Factory (a)	Farm	Total		Factory (a)	Farm	Total
1939-40	1,142	150	1,292	1964-65	1,158	13	1,171
1944-45	1,122	68	1,190	1965-66	1,049	13	1,062
1949-50	948	43	991	1966-67	1,242	n.a.	(b) 1,242
1954-55	992	35	1,027	1967-68	1,281	n.a.	1,281
1959-60	1,120	24	1,144	1968-69	1,394	n.a.	1,394

(a) From 1959-60, includes small quantities made in establishments not classified as factories.

(b) Excludes farm production from 1966-67.

Dairy Products

In 1968-69, Tasmania's production of milk was 102,164,000 gallons which is over 11 per cent above the previous record level of 1966-67. During the last three years milk used for cheese manufacture has doubled. There was relatively little change in milk used for butter manufacture between 1963-64 and 1967-68, but in 1968-69, milk for this purpose increased by over 13 per cent. The following table summarises milk production since 1954-55:

Milk Production and Milk Utilisation—Summary

Year	Quantity of Milk Used for—			Total Milk Production	Dairy Cows at 31 March	Average Annual Production of Milk per Dairy Cow
	Factory Butter	Factory Cheese	Other Purposes (a)			
	'000 gal	'000 gal	'000 gal	'000 gal	no.	gal
1954-55 ..	38,737	548	12,736	52,021	111,781	485
1959-60 ..	54,597	735	14,894	70,226	126,183	554
1962-63 ..	60,877	1,440	16,201	78,518	141,255	570
1963-64 ..	63,525	2,994	16,605	83,124	(b) 140,425	(c) 577
1964-65 ..	64,621	5,265	17,457	87,343	143,257	589
1965-66 ..	65,092	6,592	16,206	87,890	148,452	578
1966-67 ..	66,520	8,411	16,636	91,567	149,148	591
1967-68 ..	64,046	10,408	16,339	90,793	152,179	581
1968-69 ..	72,546	12,837	16,781	102,164	152,894	647

(a) Milk used for 'other purposes' goes into the making of cream, ice cream, milk powder, concentrated milk, and other preserved milk products. It includes milk consumed as such. As from 1954-55, the milk equivalent of farm-made butter and cheese is also included.

(b) From 1963-64, the farm census recorded house cows (i.e. kept primarily for own milk supply) as a separate item excluded from the dairy cow population. It follows that figures for 1963-64 and subsequent years are not strictly comparable with those of previous years.

(c) Milk yielding population is taken as the mean of 'dairy cows—in milk and dry' and house cows, at 31 March in year of production and in preceding year. The figures should therefore be treated as an index rather than as an actual average quantity of milk produced per dairy cow.

Production of Butter and Cheese

The Australian dairying industry is capable of producing butter and cheese in quantities considerably greater than are required for domestic consumption, but competition from other countries in overseas markets has resulted in low prices which tend to discourage exports. The solution to this problem has been, in general terms, to pool the returns from both domestic sales and overseas sales and to distribute from the pool to each individual factory, irrespective of whether its products are sold at home or abroad; in effect, a process of price equalisation operates, the higher domestic price being used to offset the lower overseas price. The administrative body implementing this scheme is the Commonwealth Dairy Produce Equalisation Committee Ltd.

The industry also receives subsidies from the Commonwealth Government under the provisions of the various Dairy Industry Assistance Acts, the first of which was passed in 1942. Under the fifth Five Year Plan subsidies of \$27.0 million per annum are distributed by the Commonwealth Dairy Produce Equalisation Committee through factories to milk producers by payments on butter and cheese manufactured. It follows, then, that in the marketing of butter and cheese, two factors are in operation: (i) price equalisation directly affecting the return to factories; (ii) subsidies directly affecting the return to milk producers.

In 1970-71 a sum of \$15.9 million has been added to the base sum of \$27.0 million for distribution to the producers. Export producers of processed milk products received a bounty of \$800,000 under the current plan which commenced on 1 July 1967.

It should be noted that the Commonwealth subsidy is applicable to factory butter and cheese but not to the same products manufactured on farms; the decline in farm production is probably related in part to this factor.

Although Tasmanian butter factories had been in operation before the turn of the century, it was not till 1911 that annual factory production exceeded 1,000 tons and even by 1938-39, factory butter output was only approximately 4,000 tons. The next table summarises total production of butter and cheese at five-yearly intervals from 1939-40 to 1959-60.

**Total Production of Butter and Cheese
(Tons)**

Year	Butter			Cheese		
	Factory (a)	Farm	Total	Factory	Farm	Total
1939-40 ..	4,156	1,139	5,295	1,395	52	1,447
1944-45 ..	3,643	448	4,091	1,122	59	1,181
1949-50 ..	5,069	456	5,525	418	3	421
1954-55 ..	8,334	236	8,570	274	..	274
1959-60 ..	11,744	144	11,888	328	38	366

(a) Includes butter equivalent of butter oil.

Farmers in the past traditionally 'separated' their milk, producing a cream concentrate for delivery to the butter factory; the residue, skim milk, was used to feed pigs. Some factories now are buying whole milk because they have diversified their output to include casein (a raw material for synthetic fibres, etc.) and dried skim milk.

Farm production of butter and cheese in the post World War II period has fallen to such low levels as not to warrant their collection or publication in more recent years.

The following table shows details of factory production of butter and cheese since 1960-61:

**Factory Production of Butter and Cheese
(Tons)**

Year	Butter	Cheese	Year	Butter	Cheese
1960-61	10,258	348	1965-66	14,004	2,942
1961-62	12,063	605	1966-67	14,311	3,763
1962-63	13,097	643	1967-68	<i>r</i> 13,778	4,646
1963-64	13,667	1,337	1968-69	15,764	5,728
1964-65	13,903	2,350	1969-70 <i>p</i>	16,085	5,322

Disposal of Butter

Tasmania is a butter exporting State as shown in the following table:

**Butter—Production, Exports and Local Consumption
(Tons)**

Year	Production (Farm and Factory)	Net Exports (<i>a</i>)	Local Consump- tion (<i>b</i>)	Year	Production (Farm and Factory)	Net Exports (<i>a</i>)	Local Consump- tion (<i>b</i>)
1959-60	11,888	7,741	4,612	1964-65	13,999	10,231	4,527
1960-61	10,385	5,301	4,685	1965-66	(<i>c</i>) 14,004	9,295	4,390
1961-62	12,181	7,457	4,467	1966-67	14,311	10,070	4,408
1962-63	13,193	8,642	4,521	1967-68	<i>r</i> 13,778	9,390	4,698
1963-64	13,763	8,227	4,885	1968-69	15,764	9,062	4,448

(*a*) Net and gross are identical except in 1960-61 when 35 tons were imported. Includes overseas and interstate exports.

(*b*) Quantity of butter released for Tasmanian market (as supplied by the Commonwealth Dairy Produce Equalisation Committee Ltd) *less* the butter content of major commodities exported.

(*c*) Excludes farm production from 1965-66.

Consumption of Butter

Over the last ten years there has been a decline of about three pounds in the annual Tasmanian per capita consumption of butter. The decline may be partly attributed to the greater use of margarine. However, in 1968-69 the State's average butter consumption of 25.8 pounds per head of population was still well above the Australian per capita butter consumption of 21.1 pounds.

Bee-Farming

Bee-farming is a relatively small industry in Tasmania, the main producing State being New South Wales. The next table, which summarises bee-keeping statistics over a period of ten years, is restricted to details from apiarists with five or more hives.

Bee-Farming

Year	Number of Apiarists	Number of Hives	Honey Produced		Beeswax Produced	
			Quantity	Average per Productive Hive	Quantity	Average per Productive Hive
1958-59 ..	190	6,331	'000 lb 342	lb 71.5	'000 lb 4.1	lb 0.86
1962-63 ..	153	7,156	547	103.3	6.2	1.16
1963-64 ..	160	7,261	632	111.9	6.3	1.11
1964-65 ..	202	8,373	715	114.5	10.1	1.61
1965-66 ..	229	9,305	630	94.0	8.0	1.20
1966-67 ..	223	9,668	386	59.0	6.5	1.00
1967-68 ..	232	9,799	841	114.2	12.7	1.72
1968-69 ..	213	9,210	671	91.8	10.6	1.45

Of the 213 apiarists with five or more hives in 1968-69, 24 with 100 or more hives contributed 83 per cent of the total honey produced.

A proportion of the larger commercial apiarists can be described as 'migratory', in the sense that they seasonally move their hives into the leatherwood areas of the West Coast. Leatherwood, *Eucryphia lucida*, from which a distinctively flavoured honey is produced, has a large white flower and the species is unique to Tasmania. The quantity of leatherwood honey produced varies considerably from year to year depending upon the amount of blossom and weather conditions. In 1968-69, it accounted for 43 per cent of total honey production compared with only 21 per cent in 1966-67. Some hives are also moved into the orchard and small fruit areas at blossom time. The sources of honey for the Tasmanian market, and estimated honey consumption per head of population are shown in the following table:

Honey Consumption

Average for Three Years Ended—	Production	Imports	Exports	Balance Available For Local Consumption (a)	Estimated Per Capita Consumption
	'000 lb	'000 lb	'000 lb	'000 lb	lb
1958-59	398	247	39	606	1.83
1968-69	632	148	308	472	1.24

(a) Production *plus* imports *less* exports.

Poultry Farming

Introduction

Until recent years, little statistical information has been available on the poultry industry in Tasmania, principally due to difficulties of collection and adequate coverage, but changes in legislation and other factors have now made it possible to compile more detailed data.

Poultry Numbers and Egg Production

'Back-yarders': Many householders have small flocks of up to 20 birds (i.e. below the legal minimum involving registration and payment of fees) and surveys suggest that these 'back-yard' flocks may produce up to 50 per cent of all eggs. However, no accurate statistics are available for this 'back-yard' component and it is excluded from the tables that follow.

Commercial Producers: Producers with small flocks over the legal minimum size (more than 20 birds) may nevertheless keep them mainly to use, rather than to sell the eggs and accordingly, it was also decided to exclude from the statistics producers with less than 100 birds (of all types); the Bureau's 1966-67 census of the poultry industry established that producers in this excluded category numbered 213 but owned only three per cent of the total number of hens and laying pullets in commercial flocks in Tasmania.

In the poultry industry, as in many other primary industries, there has been a trend to fewer but larger establishments in recent years. In 1967 there were 196 poultry farms with a total of 189,600 hens and laying pullets; by 1969 the number of farms had decreased to 148 with 181,000 hens and laying pullets. A size classification of the 148 farms in 1969 shows that 16 farms accounted for only eleven per cent of farm numbers but possessed 48 per cent of the laying stock. Fifty-five per cent of the poultry farms each had less than 500 laying birds.

The following table shows the number of poultry on the 148 poultry farms which reported a total of 100 or more birds of all types at 30 June 1969; also the eggs produced from hens and pullets during 1968-69.

Poultry Numbers and Egg Production, 1968-69
Commercial Producers Only (a)

Statistical Division	Number of Poultry Farms (a)	Poultry Numbers at 30 June 1969				Eggs Produced 1968-69 (b)
		Hens and Laying Pullets	Other Fowls	Ducks	Turkeys	
		'000	'000	'000	'000	'000 doz
Hobart	42	47.1	4.4	..	..	874.8
South Eastern	18	22.1	16.9	..	0.1	368.3
Southern	18	20.9	140.7	..	5.5	362.9
North Central	4	2.4	1.7	..	..	54.3
North Western	26	33.9	6.1	0.1	..	637.3
North Eastern	23	33.6	13.9	1.2	..	558.3
North Midland	13	9.4	4.6	..	..	209.3
Midland	4	11.6	2.4	..	..	192.0
Western .. .. .	..	..	..	..	..	..
Total	148	181.0	190.8	1.6	5.7	3,256.9

(a) Includes only producers with a total of 100 or more birds of all kinds.

(b) Hen and pullet eggs only. Includes 180,353 dozen eggs produced by commercial poultry farms which ceased production before 30 June 1969.

At 30 June 1970, 133 poultry farms reported more than 100 birds each; of these fifty-four per cent had a flock size of less than 500 birds. A total of 173,500 laying birds was reported at the census date.

Poultry Slaughtering

Poultry slaughtering statistics were first collected in 1960-61 from all known establishments slaughtering 100 or more birds (of all types) annually; up to 1964-65, only numbers slaughtered were sought but from 1965-66 data were expanded to include both live and dressed weight. The next table shows the information available for a three-year period:

Number and Weight of Poultry Slaughtered (a)

Year	Number of Poultry Slaughtered	Weight of Poultry Slaughtered			
		Live Weight		Dressed Weight (b)	
		Total	Average per Bird	Total	Average per Bird
	'000	'000 lb	lb	'000 lb	lb
CHICKENS (I.E. BROILERS, FRYERS AND ROASTERS)					
1966-67	753	2,691	3.6	1,969	2.6
1967-68	861	3,057	3.6	2,264	2.6
1968-69	1,001	3,881	3.9	2,866	2.9
OTHER FOWLS (c)					
1966-67	129	623	4.8	440	3.4
1967-68	148	743	5.0	525	3.5
1968-69	131	638	4.9	447	3.4
DUCKS AND DRAKES, TURKEYS, GEESE					
1966-67	35	230	6.6	172	5.0
1967-68	49	333	6.8	241	4.9
1968-69	37	255	6.8	196	5.3

(a) Includes only establishments slaughtering 100 or more birds of all kinds.

(b) Includes weight of whole birds, pieces and giblets.

(c) Hens, roosters, etc.

During 1969-70, 978,000 chickens, 115,000 other fowls and 35,000 ducks, drakes, turkeys and geese were slaughtered.

Size Structure of Slaughtering Industry

The following table classifies slaughtering establishments according to the number of birds slaughtered:

Number of Poultry Slaughtered According to Size of Establishment, 1968-69

Size of Establishment (Number of Birds Slaughtered) (a)	Number of Establishments	Number of Birds Slaughtered			Total Birds Slaughtered	
		Chickens (including Broilers, Fryers and Roasters)	Other Fowls (b)	Ducks and Drakes, Turkeys and Geese	Number	Proportion of Total
		'000	'000	'000	'000	per cent
100- 500 ..	33	3	5	..	9	0.7
501- 1,000 ..	11	3	5	1	9	0.7
1,001- 1,500 ..	5	2	4	..	6	0.5
1,501- 2,000 ..	3	2	3	..	5	0.5
2,001- 3,000 ..	3	5	3	..	7	0.6
3,001- 5,000 ..	4	4	11	..	15	1.3
5,001-10,000 ..	..	..	..	..	..	..
10,001-20,000 ..	2	4	14	12	29	2.5
Over 20,000 ..	6	980	86	23	1,089	93.1
Total ..	67	1,001	131	37	1,169	100.0

(a) Classified according to number of birds of all kinds slaughtered.

(b) Hens, roosters, etc.

The following illustrates the trend towards larger poultry slaughtering establishments. In 1965-66 there were 95 establishments slaughtering 100 or more birds (of all types). Nine establishments killing more than 5,000 birds a year slaughtered a total of 606,000 birds. By 1968-69, however, there were only 67 establishments killing 100 or more birds, eight of which slaughtered over 5,000 birds each, or a total of 1,118,000 birds. The dressed carcass weight of birds slaughtered in the final group of establishments in the previous table (over 20,000) was 3,246,000 lb; for all establishments in the table, the total was 3,509,000 lb. In 1965-66 the over 20,000 birds size group accounted for 83.3 per cent of the number of birds slaughtered and in 1968-69, 93.1 per cent.

A principal factor in creating a larger poultry slaughtering industry has been the marketing of quick-frozen birds through supermarkets, delicatessens, grocers, etc. Before freezing cabinets were in general use, poultry was mainly sold by butchers; refrigeration techniques have had the effect of multiplying the sales outlets. Large-scale production has also cut unit costs.

Chicken Hatching

In 1964-65, the first census of commercial chicken hatcheries (i.e. those establishments hatching chickens for sale) was undertaken. As from 1965-66, the census was extended to all hatcheries which set 1,000 or more eggs during the year, including hatcheries producing chickens for their own use and not for sale. In 1965-66, 1,108,000 chickens were hatched, 62.2 per cent for meat production and 33.6 per cent for egg production (the balance being for breeding purposes). Of the 1,421,000 chickens hatched in 1967-68, 69.4 per cent were for meat production and 26.1 per cent for egg production.

Because of the limited number of hatcheries operating in 1968-69, most of the statistical information for that year is confidential and therefore cannot be published.

RURAL POPULATION AND EMPLOYMENT

Employment on Rural Holdings

The following table gives details of males working on rural holdings as reported in the annual farm census at 31 March:

Male Farm Workers at 31 March

Particulars	1959	1965	1966	1967	1968	1969
Number of Rural Holdings, One Acre and Over	11,374	10,979	10,777	10,641	10,631	10,384
Males Working Permanently Full-time on Holdings—						
Owners, Lessees or Share Farmers	7,806	7,651	7,450	7,564	7,158	6,915
Relatives of Owners, etc. (over 14 years) not Receiving Wages	248	20	6	5	..	..
Employees including Managers and Relatives Working for Wages or Salary ..	4,472	4,075	4,073	4,101	4,051	3,842
Total Permanent Males ..	12,526	11,746	11,529	11,670	11,209	10,757
Males Working Temporarily on Holdings on Wages or Contract	5,273	5,993	5,715	4,773	4,621	4,831

Female Workers on Rural Holdings

Similar details of female employment are not available due to a difficulty of definition; the difficulty is to establish in what degree a woman performing ordinary domestic duties on a rural holding performs other rural tasks that justify her classification as a *permanent full-time rural worker*, in the same sense that the term is applied to a male.

Permanent Residents on Rural Holdings

Persons of all ages residing permanently on rural holdings (as defined for statistical purposes) numbered 22,697 males, 20,614 females, or a total of 43,311 persons at 31 March 1969. The total number in 1968 was 44,630 and in 1967, 45,200.

When those of school and lower ages, and women engaged in domestic duties, etc. have been excluded, the remaining rural population is not necessarily engaged full-time in farming. Some who are included in farm population devote much of their time to non-farming activities such as working in commercial or industrial enterprises, commercial fishing, sawmilling, etc. (which is only to be expected since a rural holding may be as small as one acre).

TECHNICAL ASPECTS OF RURAL INDUSTRY**Artificial Breeding***Introduction*

Artificial breeding is a technique applicable to animals, birds and bees, whereby a female is inseminated artificially with semen collected from a male. In Tasmania, its main application has been in cattle; in recent years, however, trials carried out by the Department of Agriculture have indicated sound commercial possibilities for artificial insemination in swine.

Artificial breeding has the following advantages—

(i) *The More Effective Use of Superior Bulls:* One collection of semen taken from a bull (the quantity normally expressed in a natural mating) can, when processed and deep frozen, provide sufficient doses for 300 or more inseminations. Deep-frozen semen can be stored in liquid nitrogen at a temperature of -192°C for many years without deteriorating in quality. This enables superior bulls to produce more progeny, which are distributed among a greater number of breeders.

(ii) *Disease Control:* Infertility diseases, such as *vibriosis*, *brucellosis* and *trichomoniasis*, all of which are transmitted by bulls, can be effectively controlled with the use of artificial insemination, by eliminating the contact of bulls with cows.

Government Control of Artificial Breeding

The first Artificial Insemination (A.I.) Centre was established in 1955 as a farmers' co-operative at Marrawah in the North-West. Semen was imported from interstate.

As a result of an investigation into livestock reproductive diseases and infertility carried out by the Department of Agriculture in 1956, infertility clinics were set up for treating badly-affected herds, the semen for artificial insemination being provided from bulls stationed at Mt Pleasant Laboratories. Herds served in this way recovered fertility, and were then transferred to commercial centres.

In 1957, the Government established the Artificial Breeding Board, consisting of the Chief Veterinary Officer as Chairman, the Chief Dairy Officer, two representatives of farmers' organisations, and one representative of breed societies. Commercial A.I. Centres were approved and licensed by the Board and by 1963, there were nine centres operating, all controlled by local farmers.

The *Artificial Breeding Act* 1964 reconstituted the Board, adding a sixth member (a financial expert) and gave the new body authority to buy and sell semen, to produce semen from its own bulls, and to employ its own staff. The Board established the Semen Production Centre at Hadsphen Park and took over the management of local A.I. centres.

Benefits

(i) *Increased Dairy Production:* The Board's policy of progeny testing all dairy bulls, and selecting from these only those that are proven, i.e. where progeny are out-producing their contemporaries by a significant amount in both butterfat and milk, has contributed to the increased production per cow in Tasmania. In 1961-62 the average annual production per grade cow was 272 lb of butterfat; in 1968-69, this figure had increased to 310 lb.

(ii) *More Efficient Beef Production:* To meet the demands of increased dairy beef production and interest shown by beef breeders, the Board purchases bulls only from the top 20 per cent in respect of daily weight gain performance. Thus beef producers may make use of superior beef sires whose progeny, because of their greater daily weight gain, are more efficient producers of meat.

(iii) *Disease Control:* As a result of vigorous eradication programmes based on test and slaughter and the artificial insemination of infected herds, many disease problems have virtually been eradicated from Tasmania.

Recent Developments

Custom Collection of Semen: The Board now provides a service to farmers whereby semen can be collected from a privately-owned bull, and stored for the owner until needed. This provides insurance against injury to valuable bulls, and greatly extends their use.

Semen Imports: During 1969-70, inseminations were carried out in beef herds with semen not only from traditional beef sires, but also with imported semen from Brahman, Santa Gertrudis and Murray Grey breeds.

The lifting of import restrictions on semen from the United Kingdom in 1968 resulted in the first shipments of semen arriving in Tasmania during 1970. This has allowed Tasmanian breeders to introduce new blood into their herds as well as new breeds such as the Charolais. Over 2,000 doses of U.K. semen have been ordered through the Board for Tasmanian breeders.

Semen Exports: Semen produced at Hadsphen Park is exported to all Australian States, and trial shipments have been sent to India, Ceylon and Malaysia. There are good prospects for future sales to Asia, where local authorities are carrying out breeding programmes which involve crossing native cattle with Friesians and Jerseys. Progeny of Hadsphen Park sires are scattered throughout India and their future progress will be watched with interest.

Artificial Breeding Statistics

Details follow of artificial breeding by commercial centres and in the treatment of infertility by Department of Agriculture infertility clinics.

Artificial Breeding: Commercial and Infertility Services (a)

Year	Cows Served			Total Inseminations	Non-return Rate for Commercial Service (c) (Per Cent)
	Commercial Service	Infertility Service (b)	Total Cows		
1961-62	10,008	9,527	19,535	30,674	61.5
1962-63	10,879	11,422	22,301	34,077	64.7
1963-64	14,427	9,765	24,192	38,029	61.2
1964-65	17,430	6,454	23,884	36,847	62.5
1965-66	27,152	2,010	29,162	46,106	61.4
1966-67	29,034	2,298	31,332	47,148	66.1
1967-68	41,892	197	42,089	60,587	68.3
1968-69	(d) 43,658		43,658	62,551	69.3
1969-70	49,818		49,818	70,350	70.2

(a) Source: Annual reports, Artificial Breeding Board.

(b) Includes cows inseminated in Department of Agriculture's research programme.

(c) Percentage of cows not returning for further service within 90-120 days following first service.

(d) Separate figures not available after 1967-68; infertility service numbers are negligible.

In 1969-70, 85.9 per cent of total inseminations were from Tasmanian sires; of which 53.0 per cent were from Friesians, 20.3 per cent from Jerseys, 21.5 per cent from Herefords and 3.8 per cent from Angus.

Farm Machinery on Rural Holdings

A previous table showing male farm workers over a ten-year period indicated a substantial fall in the rural labour force. This decline must be associated, in some degree, with the increasing use of machinery on farms. The following table gives details of machinery on rural holdings at 31 March:

Machinery on Rural Holdings at 31 March

Type of Machinery	1959	1965	1966	1967	1968	1969
Cultivating Equipment—						
Rotary Hoes and Rotary Tillers—						
Self Contained Power Unit						
Type	(a) 1,134	1,270	1,199	1,221	1,284	1,292
Tractor Mounted or Trailing						
Type	(b) 525	680	626	723	927	962
Harvesting Equipment—						
Headers, Strippers and Other						
Harvesters	699	717	703	655	726	711
Mowers, Agricultural—						
Reciprocating (Cutter Bar)						
Type—						
Power Drive	3,639	4,940	5,132	5,193	5,134	5,139
Ground Drive	2,000	1,176	994	823	664	617
Rotary Types (incl. Slashers, etc.)	n.a.	n.a.	n.a.	n.a.	1,197	1,392
Hay Rakes—						
Side Delivery	1,650	2,336	2,386	2,438	2,543	2,609
Buck	923	1,017	1,022	988	983	954
Dump	1,448	1,060	971	861	848	796
Forage Harvesters	69	241	269	309	317	329
Pick-up Balers	1,025	1,599	1,661	1,757	1,903	1,957
Potato Diggers	1,139	951	950	932	958	923
Potato Harvesters	n.a.	n.a.	n.a.	n.a.	n.a.	70

Machinery on Rural Holdings at 31 March—*continued*

Type of Machinery	1959	1965	1966	1967	1968	1969
Seeding and Planting Equipment—						
Grain Drills (All Types) ..	3,871	4,036	4,036	4,011	3,944	3,925
Fertiliser Distributors & Broadcasters—						
Rotary	2,989	3,657	3,841	3,909	4,149	4,177
Direct Drop	1,778	1,978	1,925	1,896	1,911	1,799
Potato Planters	<i>n.a.</i>	215	239	250	270	281
Other Equipment—						
Shearing Machines (Number of Stands)	3,798	4,493	4,652	4,559	4,824	4,862
Milking Machines (Number of Stands)	10,721	13,806	15,894	16,414	16,968	17,057
Hammer Mills	225	440	512	570	635	644
Power Driven Spray Plants—						
Fruit	1,273	1,224	1,195	2906	2,996	2,958
Vegetable and Pasture ..	744	1,678	1,870			
Power Driven Irrigation Plants	862	1,836	2,034	2,148	2,473	2,479

(a) Rotary hoes only.

(b) Tractor mounted type only.

The next table deals with tractors and gives a ten-year comparison:

Number of Tractors on Rural Holdings at 31 March

Type of Tractor	1959	1965	1966	1967	1968	1969
Wheeled	7,838	10,250	10,856	11,042	11,478	11,642
Crawler	968	1,129	1,091	1,129	1,186	1,108
Total	8,806	11,379	11,947	12,171	12,664	12,750

Every three years details are obtained from all farmers regarding characteristics of tractors used. A summary of this information for wheeled tractors is given in the next table (1969 being the most recent year for the detailed collection):

Classification of Wheeled Tractors on Rural Holdings at 31 March 1969

Horsepower (a)		Tractors Using as Fuel			Tractors Classified According to Age				
		Diesel Oil	Kerosene	Petrol	Under 5 Years	5 and Under 10 Years	10 and Under 15 Years	15 Years and Over	Total
Over	Up to								
..	15	35	6	29	17	16	27	10	70
15	25	172	319	297	9	24	114	641	788
35	35	1,529	770	1,758	146	629	1,407	1,875	4,057
35	45	4,159	253	356	1,572	1,229	1,486	481	4,768
45	60	1,619	36	4	715	505	343	96	1,659
60	100	295	1	2	266	20	7	5	298
100	..	2	..	..	2	..	..	..	2
Total ..		7,811	1,385	2,446	2,727	2,423	3,384	3,108	11,642

(a) Maximum belt horsepower.

Artificial Fertilisers

The trend over the last ten years has been to greater use of artificial fertilisers, not only in total, but also in average application per acre as illustrated in the next table:

Artificial Fertilisers Used

Particulars	Unit	1958-59	1965-66	1966-67	1967-68	1968-69
Vegetables (a)—						
Area Fertilised	'000 acres	43	30	29	28	29
Fertiliser Used—Total ..	'000 cwt	138	192	180	190	184
Per Acre	cwt	3.81	6.35	6.28	6.75	6.43
Fruit—						
Area Fertilised	'000 acres	20	21	21	20	20
Fertiliser Used—Total ..	'000 cwt	137	154	147	147	141
Per Acre	cwt	6.77	7.31	7.02	7.37	7.14
Pastures—						
Area Fertilised	'000 acres	1,043	1,475	1,588	1,561	1,481
Fertiliser Used—Total ..	'000 cwt	1,601	2,545	2,687	2,700	2,470
Per Acre	cwt	1.53	1.72	1.69	1.73	1.67
Other Crops—						
Area Fertilised	'000 acres	83	184	182	196	204
Fertiliser Used—Total ..	'000 cwt	170	388	380	409	414
Per Acre	cwt	2.05	2.11	2.09	2.09	2.03
Total Usage—						
Area Fertilised	'000 acres	1,190	1,711	1,819	1,805	1,733
Fertiliser Used	'000 cwt	2,046	3,278	3,395	3,444	3,209

(a) From 1964-65, figures obtained refer to vegetables for human consumption only.

In the twenty-year period ending 1967-68, artificial fertiliser usage rose rapidly, the area treated increasing by 256 per cent and the quantity applied by 311 per cent. Although the area of crops and improved pastures increased in 1968-69, there was, for the first time since 1948-49, a decline in the total area fertilised. The quantity of fertiliser used also decreased, by seven per cent from the 1967-68 figure.

Types of Artificial Fertiliser

The basic types of artificial fertiliser employed are phosphatic (e.g. superphosphate), nitrogenous (e.g. sulphate of ammonia) and potassic (e.g. muriate of potash), their essential chemical contribution to plant nutrition being phosphoric acid (P_2O_5), nitrogen (N) and potash (K_2O). Superphosphate, either 'straight' or with additives, is most widely used in Tasmania, the additives consisting of trace elements such as cobalt, molybdenum, copper, boron, zinc, etc. In addition to the basic fertiliser types, the following combinations are also in use: mixed nitrogenous and phosphatic; mixed nitrogenous and potassic; mixed phosphatic and potassic; mixed nitrogenous, phosphatic and potassic. Due to the numerous combinations on the market, it has not been possible to obtain any detailed analysis of the fertiliser types applied to various purposes. Some of the fertiliser combinations include agricultural lime which is used (separately or in mixtures) as a soil conditioner to reduce excess acidity.

One important cause of soil infertility is the absence of certain trace elements which occur in healthy soil in very small quantities. The remedy is soil analysis, detection of the deficiency and application of fertiliser containing the required trace element, or combination of elements.

Aerial Agriculture

The term 'aerial agriculture' is applied to the use of aircraft for top-dressing and seeding, for spraying and dusting of crops and pastures, and for pest and vermin destruction. In Tasmania, the obvious limitations to more extensive development of this technique are small holdings and the nature of the terrain. The area treated from aircraft in the year ended 31 March 1969 (in '000 acres) was as follows: N.S.W., 6,280; Victoria, 1,956; S.A., 856; Australia, 14,416 (because of the limited number of operators, details for Queensland, Western Australia and Tasmania are regarded as confidential). Even though the area treated in Tasmania is relatively small compared with that in the other States, there has nevertheless been rapid development of this technique, particularly since 1964-65.

Area of Land Irrigated

Comparison

Both N.S.W. and Victoria have over one million acres of irrigated land. By way of contrast, the Tasmanian total was only 56,252 acres in 1968-69. Owing to the generally more reliable rainfall in Tasmania, scarcity of water is not such a problem as it is in the other Australian States, though quite a number of streams are not permanently flowing. The drought conditions experienced in some areas of Tasmania in the last two or three years have given a warning that even here complete reliance on regular rainfall may lead to heavy individual loss.

Farm Storages

Until a few years ago, Tasmanian irrigated areas were negligible except for long-established hop fields, but there is a rapidly expanding use of spray irrigation on orchards and pastures and on potatoes and other vegetable crops. Until recently, there was an almost complete dependence on natural stream flows, but the need for some regulating storages has become apparent. Farmers have been constructing storages for their own use, and the extension of this practice is seen as the logical solution in most areas, as valleys are narrow and steep sided. There are not many areas where single large reservoirs can economically serve areas of suitable land as the topography of Tasmania inhibits the construction of cross-country canals essential for the functioning of large-scale irrigation projects.

The State Rivers and Water Supply Commission advises farmers on dam construction and estimates that farm dams are currently being constructed at a rate of about 350 per year.

Water Resources

It is true that the State has very large volumes of water stored in the central lakes and behind the dams of the State Hydro-Electric Commission but no large irrigation scheme based on power-house discharge has yet been undertaken. Unlike the Snowy River scheme, Tasmanian hydro-electric construction has been undertaken with production of power as the primary goal although the resulting storages of water at high level could obviously be the logical starting point for extensive irrigation schemes if the decision were taken to develop them.

The Derwent affords an example of the benefits of hydro-electric power development in regulating the flow of a river. Prior to the installation of the Waddamana Power Station in 1916, when the river was completely unregulated, the summer minimum flow was known to have fallen as low as 200 cusecs, and it is estimated that the lowest ever was possibly 120 cusecs. Today, regulated

by the highland storages, the minimum summer flow in normal operating conditions is about 1,400 cusecs and the average summer flow is considerably above this figure. In actual fact, the long term average flow at present being maintained in the River Derwent at its lower levels is about 4,500 cusecs (i.e. 2,250 million gallons per day or approximately nine times the average amount consumed daily from the water supply system serving Sydney and Wollongong). A flow of 4,500 cusecs, assuming no evaporation, would fill Australia's largest storage—the Eucumbene—in just over a year, the Eildon in ten months, the Hume in nine months, the Menindee Lakes in seven months, or the Warra-gamba in six months. The Derwent is an obvious example of a river from which large quantities of water can now be obtained without the creation of storages and similar opportunities exist on the South Esk, Huon, Lake, Mersey and Forth Rivers. The State's biggest rivers, the Gordon and Pieman, flow out to the West Coast and no diversion to the eastern half of the watersheds has been planned, if indeed such a scheme were practicable.

Longford-Cressy Irrigation Scheme

During 1970, the Rivers and Water Supply Commission commenced work on the Longford-Cressy Irrigation Scheme. Water from the tailrace of the Hydro-Electric Commission's Poatina works will be utilised to irrigate about 7,000 acres of land, within an area of 20,000 acres proclaimed by the Governor as an irrigation district in May 1970. Water will be available to 62 farms within the district as well as to properties near the Liffey River between Poatina and the Irrigation District. The Commonwealth Government has offered \$750,000 towards the cost of the scheme which will involve the construction of some sixty miles of channels.

The Main Channel will extend for seven miles from the Poatina tailrace to Western Lagoon, the southern boundary of the irrigation district. The West Channel will then proceed through to the Liffey River, the East Channel through to Longford whilst the North Channel will branch from the West Channel, north of Bracknell, towards Hadspen.

Where required, the channels will be fenced and the fences maintained at the Commission's expense. Land-owners will be entitled to receive compensation for channel easements acquired by the Commission: in assessing such compensation, the Land Valuation Branch will take into account such factors as value of land, severance of paddocks and the enhancement of property values as a result of the scheme.

In November 1970, the Minister for Lands and Works announced the acceptance of a tender of \$181,697 for the construction of the Main Channel—Stage 1 of the project. The successful tenderer, Herbert Bros. Pty Ltd specialises in irrigation development. The seven mile channel is scheduled for completion by the end of March 1971.

Other Areas

The Commission is currently investigating the feasibility of establishing similar storage schemes for the valleys of the Coal, Jordan, Meander and Huon Rivers.

Area Irrigated

A total of 2,009 farms reported the use of irrigation in 1968-69 compared with 2,299 in the previous year. In three municipalities, the area irrigated exceeded 4,000 acres: Hamilton, 5,708 acres (pasture 5,058 acres and hops 225 acres); Ulverstone, 4,749 acres (vegetable crops 3,940 acres); Huon, 4,055 acres (fruit, predominantly orchard fruit, 3,053 acres). Details of the area of crops and pastures irrigated in Tasmania are shown in the following table:

**Area of Crops and Pasture Irrigated
(Acres)**

Year	Crop					Pasture	Total
	Hops	Green Feed	Fruit	Potatoes	Other Crops		
1959-60	1,311	1,286	2,350	467	1,355	11,339	18,108
1960-61	1,364	1,177	3,311	863	1,850	10,369	18,934
1961-62	1,447	1,589	3,930	1,374	3,136	11,713	23,189
1962-63	1,465	2,043	4,446	1,688	3,208	11,435	24,285
1963-64	1,463	2,703	5,933	1,984	5,794	15,693	33,570
1964-65	1,553	2,583	5,955	2,246	7,791	14,194	34,322
1965-66	1,524	3,948	7,241	4,216	10,616	17,651	45,196
1966-67	1,495	5,433	8,287	4,100	9,799	18,111	47,225
1967-68	1,587	6,273	9,042	5,887	14,275	29,182	66,243
1968-69	1,550	3,784	8,157	6,316	13,283	23,167	56,252

Irrigation Methods and Sources of Water

In 1967-68, for the first time, statistics of irrigation methods and source of water used for irrigation were collected. The main method of irrigation is by 'spray' which accounted for 79 per cent of the total area irrigated in 1968-69. The following table gives details of the methods of irrigation used:

**Method of Irrigation, 1968-69
(Acres)**

Crop or Pasture Irrigated	Method				Total
	Spray	Channel or Furrow	Flooding	Multiple Methods	
Crops—					
Potatoes ..	6,297	11	6	2	6,316
Other Vegetables ..	10,684	7	3	3	10,697
Fruit ..	7,446	314	125	272	8,157
Green Feed ..	3,525	..	259	..	3,784
Hops ..	522	803	162	63	1,550
Other Crops ..	2,537	28	..	20	2,585
Pasture ..	13,232	2,160	6,755	1,020	23,167
Total ..	44,242	3,322	7,309	1,380	56,252

The next table shows areas irrigated from each source of water:

Source of Water for Irrigation, 1968-69

Source of Water	Area Irrigated (Acres)		Number of Holdings Reporting Each Source of Water	
	1967-68	1968-69	1967-68	1968-69
Surface Water Supplied by Communal Irrigation Schemes	1,265	1,537	16	18
Other Surface Water—				
Direct from Rivers, Creeks, etc. ..	34,466	27,669	979	792
From Farm Dams, etc.	29,518	26,321	1,345	1,218
Underground Water Supply (Bore, Well, etc.)	280	240	43	36
Municipal Water Supply	714	486	120	94
Total	66,243	56,252	(a) 2,299	(a) 2,009

(a) This is the total number of holdings reporting the use of irrigation and not the total number of holdings reporting each source of water since one holding may report a number of different sources.

The next table highlights the growing importance of irrigation in the potato growing industry:

Potatoes Irrigated

Particulars	1958-59	1966-67	1967-68	1968-69
Total Area of Potatoes Planted .. acres	16,186	10,278	10,960	11,461
Area Irrigated—				
Total acres	471	4,100	5,887	6,316
As Proportion of Area Planted per cent	2.9	39.9	53.7	55.1

TASMANIAN DEPARTMENT OF AGRICULTURE

Aims and Structure

The original Department of Agriculture created in the late 1880s had very narrow aims, principally administering plant and animal regulations, and advising the Government on all phases of agriculture. In 1927, however, the State Government decided to re-organise the Department, a new aim having been suggested by the Commonwealth Development and Migration Commission which most strongly urged the spread of scientific knowledge among primary producers.

The functions of the modern Department are: (i) active research and investigation into agricultural problems; (ii) wide dissemination of technical information and other advice to farmers; (iii) regulatory and administrative action as required under various State Acts.

To carry out these functions, the Department, headed by the Director, is divided into six *divisions* (agronomy, horticultural, dairy, plant pathology, entomology and fisheries), three *services* (extension, animal health and administrative) and three *sections* (wool, piggery and poultry). The Department has its own laboratories, research stations and experimental farms.

Research and Investigations

Introduction

The fundamental work, undertaken in the State's research farms and laboratories, is aimed at increased productivity through improvements in plant and animal performance.

At present, there are three research stations and one laboratory associated with agronomical research, two research stations and a laboratory involved in horticultural research, one bacteriological laboratory devoted to dairy research and bacterial investigations, and laboratories which deal with entomological and plant pathological investigations. Livestock studies are conducted on two of the stations associated with agronomical research.

The following lists the stations, farms, etc. and summarises the principal work each performs:

Cressy Research Farm

Research into, and production of, foundation seed for cereals, pulse crops and pasture species; livestock research relating to poultry, sheep and pigs.

Elliott Research Farm

Production of foundation seed (barley, field peas and pasture and multi-crop forage varieties); research relating to pasture crops, potatoes and sheep.

Tewkesbury Potato Station

Production and improvement of foundation seed supplies; research into maximising potato yields.

Huon Horticultural Research Station

Research into pome fruits.

Forthside Vegetable Research Farm

Production of foundation seed; research into maximising vegetable yields.

New Town Experimental Station

The Department of Agriculture's New Town research complex, completed in 1970, satisfies a long existing demand for an integrated research centre in southern Tasmania. In the past, overcrowding and inadequate facilities imposed serious limitations upon the work of the Hobart based research sections. Dispersal of sites presented further problems to the various sections; the plant pathology and entomology research divisions, once almost three miles from the Department's glass-houses and insectary at New Town, are now located at the same site. The New Town complex also houses the horticultural officers stationed at Hobart, the main Department library, the weed section of the agronomy division, and facilities to study nematodes and insecticides. Cool rooms, where the effects of cool storage on fruit can be studied, have been included in the basement of the centre.

Establishment of facilities to study the effects of cool storage upon fruit is of particular importance to Tasmanian apple and pear orchardists. In the past, the Department's investigations into cool store life of fruit has been conducted in commercial cool stores; this method of study proved unsatisfactory since experiments had to be designed to fit in with the normal operations of the cool store.

Provision has recently been made for specially-designed temperature control facilities for the maintenance of insect cultures and the study of disease organisms and insect pests. The purification and preparation of anti-sera for the production of virus-free nucleus planting material has been made possible by special new facilities. The Department's valuable collection of insects is to be expanded and re-organised.

Launceston Laboratories

The main centre is at Mt Pleasant and there is also a bacteriological laboratory. The chief fields of investigation are in agronomy, horticulture and bacteriology.

Chapter 7

PRIMARY INDUSTRY—NON-RURAL

FORESTRY

Introduction

Writing in 1891, the Government Statistician, R. M. Johnston, painted a glowing picture of Tasmania as an island covered with 'an almost continuous virgin forest', and drew this conclusion: 'With such a wealth of forest trees, Tasmania's sources of timber supply must be infinitely great, and, in the near future, must be of great industrial value.'

It is doubtful whether this picture of an island almost completely forested was true, even when the early settlers arrived, since some of them established holdings on open savanna-like country which owed its origin to a long history of firing by the Tasmanian natives. Far away in the west and south were extensive areas of button-grass plain while the upper mountain country took on the appearance of moors. In the almost one hundred and seventy years since the first settlement, land clearing, timber exploitation and fires have left their mark and the Forestry Commission estimated the total forest area as 7,791,605 acres at 30 June 1969, (i.e. approximately 46 per cent of the State's total area). By Australian standards, however, a State with 46 per cent of its area under forest is uniquely endowed.

Trees of the Tasmanian Forests

Forest Types

There are two basic types of forest in Tasmania: rain forest and sclerophyll forest, and their respective occurrence may be correlated with intensity of rainfall. The rain forest is principally located in the western half and also in the north-east highlands, the sclerophyll forest predominating elsewhere. In Tasmania the sclerophyll forest can be regarded as eucalypt forest, because of the dominance of eucalypts. The temperate rain forest is characterised by the dominance of *Nothofagus cunninghamii* (myrtle), *Eucryphia lucida* (leatherwood), *Atherosperma moschatum* (sassafras), *Acacia melanoxylon* (blackwood) and other trees which appear with changed soil conditions. The exclusive appearance of myrtle types or of eucalypts is determined by rainfall factors. In areas with annual falls above 60 inches, the myrtle appears to exclude the eucalypts, while in areas averaging 45 to 60 inches myrtle is found as understorey cover to eucalypt growth. Since the eucalypts are the most important Tasmanian source of timber, in general it can be said that the better quality forests grow in regions between the 30-inch and 60-inch isohyets. The most valuable eucalypts in such forests belong to the ash group and include *delegatensis* (alpine ash), *obliqua* (stringy bark), and *regnans* (mountain ash). In areas with falls of less than 30 inches, the forests have *globulus* (blue gum), *linearis* and *pauciflora* (peppermint), *ovata* (swamp gum), *viminialis* (white gum) and also *obliqua* (stringybark).

Hardwoods and Softwoods

Tasmanian forests are almost exclusively cut for hardwood, the slow growing indigenous softwoods having been exploited in the past without effective regeneration; they were never very plentiful. The principal varieties are *Athrotaxis selaginoides* (King Billy pine), *Dacrydium franklinii* (Huon pine) and *Phyllocladus aspleniifolius* (Celery-top pine). The scarcity of indigenous soft woods is being met, in part, by the creation of exotic plantations, the principal variety grown being *Pinus radiata*, but at 30 June 1969 the softwood plantations (51,000 acres) accounted for only 0.7 per cent of the State's total forested area. The following table shows the area of softwood and hardwood plantations established by the Forestry Commission.

Area of Plantations at 30 June
(Acres)

District	1968			1969		
	Soft-woods	Hard-woods	Total	Soft-woods	Hard-woods	Total
Smithton .. ..	..	23.0	23.0	..	23.0	23.0
Burnie	4,557.5	..	4,557.5	4,980.3	..	4,980.3
Devonport	4,778.7	910.9	5,689.6	5,208.7	910.9	6,119.6
Launceston	1,096.0	..	1,096.0	1,196.0	..	1,196.0
Scottsdale	12,212.0	..	12,212.0	13,099.0	..	13,099.0
Fingal	8,807.0	..	8,807.0	11,241.0	..	11,241.0
Geeveston	75.0	..	75.0	152.0	..	152.0
Other (a)	28.0	..	28.0	28.0	..	28.0
Total	31,554.2	933.9	32,488.1	35,905.0	933.9	36,838.9

(a) Trial plots established in various localities.

The Forestry Commission intends to plant 4,900 acres of softwoods during 1970-71. The distribution of plantings by districts is (in acres): Fingal, 2,000; Devonport, 1,000; Scottsdale, 900; Strahan, 600; Burnie, 300; Launceston, 100. The Strahan project provides employment for wharf labourers displaced by the closure of the Strahan port. The planned total area of softwood plantations in the Strahan area will approach 30,000 acres.

Demand for Forestry Products

Timber was always in demand as a fuel, and as a building and construction material from the days of the original settlement. The possibility of using eucalypts for paper manufacture was investigated in the nineteenth century by Sir Ferdinand von Mueller, the celebrated botanist, and he concluded that eucalypts provided a bark which was suitable for the manufacture of papert. In actual fact, when paper making was begun at Burnie in 1938 the process involved discarding the bark and converting de-barked billets to pulp. In 1941, the only newsprint mill in Australia was established at Boyer on the Derwent; more recently, in 1962, a pulp mill began operations at Geeveston in the south. A further pulp and paper mill commenced production during 1970 at Wesley Vale near Devonport. Further utilisation of forestry products has been introduced by factories producing plywood, hardwood, particle board etc., while growing demand for woodchips for processing overseas has led to the creation of companies with plans to export this product. The first woodchips will be exported from Triabunna on the east coast during 1971.

Forest Area

In the next table showing details of Tasmania's total forest area, a distinction is made between *exploitable* and *potentially exploitable*. The first term needs no definition but the second describes forest too immature to warrant exploitation at present, or forest of higher quality where transport costs to the nearest market are prohibitive in present circumstances.

Obviously the distinction will change from time to time; for example the establishment of the wood pulp industry at Geeveston created a local market near forest areas once classed as only *potentially* exploitable, and created a demand for trees of lower grade than those used in sawmilling.

Classification of Forest Area (Gross) at 30 June 1969 (a)
(’000 Acres)

Forest Area	Located on—		Total
	Crown Land	Private Land	
Exploitable—Hardwood	2,633	1,121	3,754
Softwoods	11	6	16
Total	2,644	1,127	3,770
Potentially Exploitable—Hardwood ..	2,097	428	2,525
Softwood ..	26	9	35
Total	2,123	437	2,560
Other Areas Classified as Forest	944	517	1,461
Estimated Total Forest Area	5,711	2,081	7,792

(a) Includes 51,000 acres of softwood plantations, and 900 acres of hardwood plantations at 30 June 1969.

The previous table includes all forests and plantations, whether easily accessible or not, and also the forested areas in scenic reserves. The next table gives details of that part of the total area which is under reservation ('reservation' in this context means land either used or to be used exclusively for forestry purposes; it includes also the forested areas of scenic reserves):

Forest Area (Gross) Under Reservation at 30 June 1969
(’000 Acres)

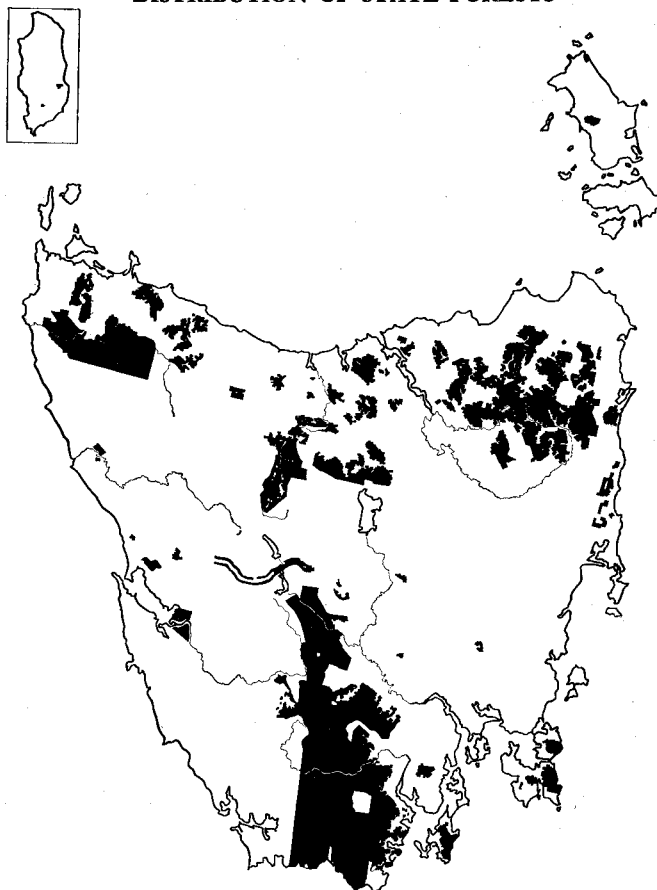
Particulars	Pulpwood Concessions	Exclusive Forestry Permits	Scenic Reserves (a)	Other	Total
State Forests (b) ..	1,922	61	..	725	2,708
Timber Reserves (c)	172	..	..	83	255
Other Forested Reserves	2,228	98	234	..	2,560
Total	4,322	159	234	808	5,523

(a) Estimated forested component of national parks and scenic reserves.

(b) Land permanently dedicated to timber production.

(c) Land reserved for timber supply, including fuel.

DISTRIBUTION OF STATE FORESTS



The area of plantations of exotic pines at 30 June 1969 was 51,605 acres, of which 14,766 acres were on private land and 36,839 acres located in State Forestry Commission plantations.

Classification of State Forests

The classification by the Forestry Commission of the State Forests is a continuous process and a large section still remains unclassified. The position, according to latest figures available, is as follows:

Classification of State Forests at 30 June 1969
(*000 Acres)

Particulars	Area	
Commercial Forest—		
Eucalypt (sawlog quality)	550	
Eucalypt (pulpwood and firewood)	259	
Regrowth (immature forest)	203	
Rain Forest (myrtle, sassafras, etc.)	228	
Cleared Land (deforested areas)	60	
Total Productive Forest		1,300

Classification of State Forests at 30 June 1969—continued
(**'000 Acres**)

Particulars	Area	
Protection Forest—		
Scrubland and Plains	343	
Barren and Waste	255	
Total Unproductive Forest		598
Total Classified Forest		1,898
Total Unclassified Forest		811
Total State Forest		(a) 2,709

(a) Includes area as proclaimed at 30 June 1969 (2,561,338 acres; plus 147,470 acres the additional area disclosed by revised mapping.

The State Forests are located, in the main, in four distinct regions: (i) far north-west about the axis of the Arthur River; (ii) north-eastern highlands; (iii) north and north-west of the Great Lake; and (iv) from the south coast, north to Lake King William.

Paper, Newsprint and Plywood Industries

The establishment of paper, wood pulp and newsprint industries in the State has given rise to the need for some guarantee of assured timber supplies to the manufacturers, and therefore certain concessions and cutting rights on Crown lands have been awarded. All three pulp and paper manufacturers have plans to expand plant capacity. For a more detailed description of Australian Paper Manufacturer's Geeveston mill, see Chapter 8.

Burnie and Wesley Vale

Associated Pulp and Paper Mills Ltd and subsidiaries: manufacturer of paper and hard lining-board at Burnie and also of particle board at Wesley Vale. The company owns 250,000 acres of forested land and holds cutting rights over Crown lands for 15 miles on each side of the Emu Bay railway line from the coast to the Pieman River.

A.P.P.M. Ltd has completed at its Wesley Vale plant a building to house the first paper machine which has since been installed. Production of magazine and glossy papers from eucalypt hardwoods and *Pinus radiata* commenced in September 1970 with the completion of the first stage at a cost of \$22m. Initial annual capacity is approximately 35,000 tons.

The A.P.P.M. Ltd particle board factory at Wesley Vale operates on *Pinus radiata*; the company obtains thinnings from plantations of the Forestry Commission and to a limited extent from its own plantations. Production during 1968-69 was maintained at a high level.

Boyer

Australian Newsprint Mills Ltd: manufacturer of newsprint at Boyer on the Derwent. The company is Australia's sole newsprint manufacturer. Its concession follows the general line of the Derwent as far north as Lake King William. The *Florentine Valley Paper Act* 1966 increased A.N.M.'s concession area from 273,000 acres to 373,000 acres to provide the basis for an expansion programme; the company is required by the Act to supply 10 million super feet of logs to other timber-using industries each year.

At Boyer a third paper machine came into production in January 1969 increasing annual capacity initially to 165,000 tons of newsprint. Annual capacity is to be further increased to 205,000 tons in 1972.

Geeveston

Australian Paper Manufacturers Ltd: manufacturer of wood pulp at Geeveston on the Huon River. The company's pulpwood concession includes virtually the whole D'Entrecasteaux Channel coastline and the south coast as far west as Prion Bay; inland it extends west to the Mt Picton area. Also included in the concession are Bruny Island and Tasman Peninsula.

Initially the plant had an annual capacity of 25,000 tons of wood pulp; further expansion has since raised this figure to 75,000 tons.

Plywood Manufacture

In 1947 there were four factories producing plywood but, by 1968, only one operator, Tas. Plywood Mills Pty Ltd at Somerset remained in production. A considerable proportion of the State's production of plywood is exported and it ranks as a major export item.

Multiple Use of the Forests

The establishment of paper-making industries in Tasmania has required careful use of existing forests and the Forestry Commissioners described the process in their 1960 report as follows:

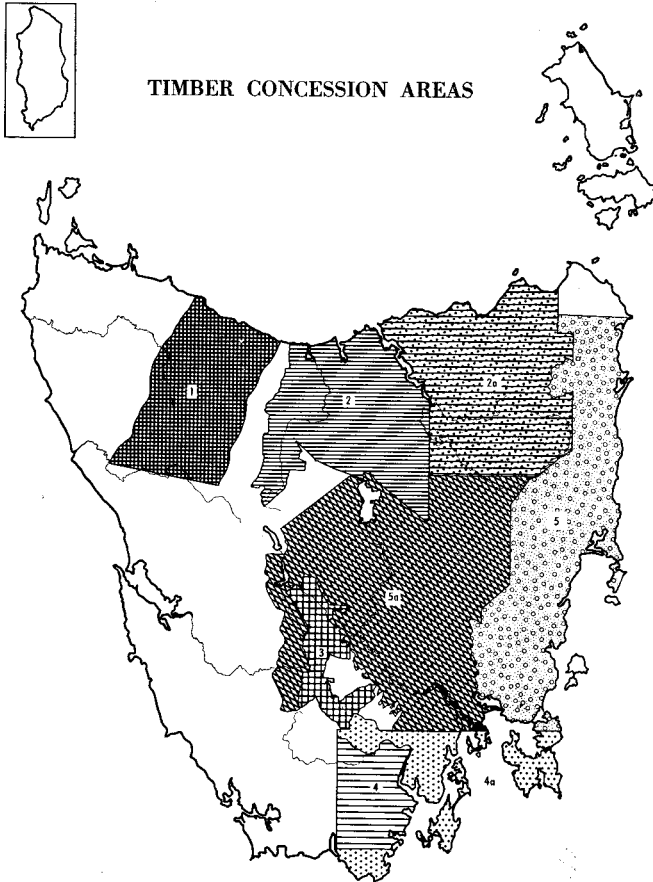
'In respect of timber products, pulpwood and sawmill logs will come from the same areas and often the same trees. In this, the co-operation of the wood-using industries is already functioning well. Sawmill logs come out of both the A.N.M. and A.P.P.M. concession areas. Pulpwood is cut from areas cut by sawmillers or in conjunction with mill-log production; sawmill edgings and offcuts are delivered to the pulp mill at Burnie.' Since this report, Australian Paper Manufacturers Ltd has commenced operations at Geeveston and sawmill logs are also produced from this company's concession.

In their 1964 report, the Commissioners stated that '... the increased demand for pulpwood has led to the utilisation of trees and timber that would otherwise have been wasted.' Increased utilisation of timber resources is illustrated by the use at A.P.P.M.'s Wesley Vale particle board mill of thinnings from Forestry Commission *Pinus radiata* plantations; in the past these thinnings were often discarded as waste. The establishment of woodchip industries at Triabunna and Bell Bay will lead to the development of low-grade forest areas which were previously unproductive.

Two obvious examples of multiple use are: (i) pulpwood obtained as a by-product from mill-logging; and (ii) waste from sawmilling operations used as a raw material in pulp and hardboard making. Despite this rational approach to more complete utilisation of timber resources, supplies are not inexhaustible and greater use must now be made of lower quality trees in milling. The Commissioners referred in their 1967 report to the role of Australian forests in the Australian economy as follows: 'Australia cannot afford the rising cost of importing from overseas countries the forest products it requires for development. Already \$200m of overseas credit is needed for this purpose. With the anticipated increase in population, the forest resources must be increased or this cost multiplied by two or three times in the next 35 years'.

Concession and Reserve Areas

The next map shows the disposition of concession and reserve areas in Tasmania. The concession areas are areas where the company is at present allowed to operate while reserve areas are set aside for future use. Providing that the company meets certain stipulated conditions, permission to remove timber from the reserve area will be granted by the Forestry Commission.



A.P.P.M.: (1) Concession Area; (2) Wesley
Vale Concession Area; (2a) Wesley
Vale Reserve.

A.N.M.: (3) Concession Area.

A.P.M.: (4) Concession Area; (4a) Reserve.

T.P.F.H.: (5) Concession Area; (5a) Reserve.

The *Pulpwood Products Industry (Eastern and Central Tasmania) Act 1968* granted concession and reserve areas over much of eastern and central Tasmania to Tasmanian Pulp and Forest Holdings Ltd (see previous map). T.P.F.H. may only utilise the timber resources of the reserve area subject to certain requirements, contained in *PART II, Section ix* of the Act. The company must obtain written permission from the Forestry Commission to extract

pulpwood from the reserve area. Authorisation is subject to the following conditions: (i) establishment of an approved wood pulp undertaking; (ii) annual usage of pulpwood by the pulping establishment of not less than 200,000 tons. The company is also permitted to obtain pulpwood from areas in the reserve required by the Commission for silvicultural purposes or by utilising trees removed for the purpose of opening the forest for the economic extraction of milling quality timber.

Definition of Forest Production

The cutting of logs in a forest and the production of sawn timber in a mill seem closely related activities and may both, in fact, be conducted by a single operator with the same team of employees; similarly, the cutting of pulpwood and its later conversion to newsprint or fine paper may be viewed, in a broad sense, as a single activity. For statistical purposes, however, saw-mills, paper mills, newsprint mills, etc. are classified as factories and the raw materials (logs, etc.) on which they operate are treated as the product of the forestry sector of primary industry. It necessarily follows that the definition of forest production must be restricted to include only the output of logs, hewn timber, firewood, tanning bark, etc. before such products have passed into the sector covered by factory statistics (e.g. logging is a forestry activity, sawmilling a factory activity). Some forestry products, as just defined, (e.g. fence posts and rails, hewn sleepers, firewood, etc.) may go direct to the final consumer without passing as a raw material to the factory sector.

Subsequent tables dealing with forest production give details of quantity and value; the following definitions apply:

Measurement of Volume

The three convenient units for expressing the volume of timber are cubic feet, true super feet and hoppus super feet. The volume in true super feet can be derived from this relationship:

- (i) Volume in true super feet = Volume in cubic feet \div 12. (A true super foot is the volume equivalent to a solid body, one foot long by one foot wide by one inch thick.)

The remaining measure, hoppus super feet, is used in the forest to record log volumes and is derived from the following formula for dealing with round timber:

- (ii) Volume in hoppus super feet = (One quarter the average girth in inches) squared, the result being multiplied by the length in feet and divided by 12.

The relationship between hoppus super feet and true super feet can be stated as follows:

$$(iii) \frac{\text{Volume in hoppus super feet}}{\text{Volume in true super feet}} = \frac{\pi}{4} = 0.7854$$

In this section, the volume of logs, timber, etc. is expressed in true super feet, some data originally received in terms of hoppus super feet having been converted.

Value of Forest Production

Gross Value of Production is the value placed on the recorded production at the wholesale price realised in the principal markets. In cases where forestry products are consumed at the place of production or where they become raw

material for a secondary industry, these points of consumption are presumed to be the principal markets (e.g. the value of logs cut for sawmilling is the value on the mill skids, analogous to 'value at the factory door' for the input of raw materials in general factory statistics).

Local Value (i.e. value of recorded production at the place of production) is ascertained by deducting marketing costs from gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

In other production sectors, local value of production is further reduced by subtracting the value of materials used in the process of production, the final figure being *net value of production*. In the forestry sector, however, these data on the cost of materials are not available and therefore the only two measures available are: (i) gross value of production, and (ii) local value of production.

Source of Production Data

The principal source of data are the returns of the various establishments classified as factories (e.g. sawmills, newsprint mills, paper mills, plywood mills, etc.) which report details of logs, pulpwood, sawmill edgings, off-cuts, etc. used as raw materials; other data are available from the State Forestry Department and the Bureau's export figures.

Statistics of Forest Production

Two items, tanning bark and peat moss, both of interest but only minor importance, are included in the value of forest production shown in the following tables. Tanning bark, important in the pre-war period, is obtained from the 'black' wattle, *Acacia mollissima*, and is used in the hide tanning industry. Peat moss, harvested in the Great Lake area, is semi-decayed vegetable matter which occupies an intermediate stage between dead vegetation and peat. After harvesting, the peat moss is cut and dried before sale to nurserymen who use it in the preparation of potting compounds.

The following table shows details of forest production:

Forest Production, 1968-69

Product	Obtained from—		Total
	Crown Land	Private Land	
Logs for sawing, peeling, slicing or pulping—			
Forest hardwoods '000 sup ft true	476,700	218,270	694,970
Indigenous softwoods '000 sup ft true	4,416	..	4,416
Plantation grown pines '000 sup ft true	19,248	2,684	21,932
Total logs—quantity '000 sup ft true	500,364	220,954	721,318
gross value \$'000	n.a.	n.a.	13,326
Hewn and other timber (not included above)—			
Firewood—weight '000 tons	18	349	367
gross value \$'000	n.a.	n.a.	2,426
Other (gross value) (a) \$'000	n.a.	n.a.	132
Total gross value of forest products \$'000	n.a.	n.a.	15,885

(a) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles and other forest products such as tanning bark, etc.

In the previous table, log production is a composite figure including the log input of sawmills and the log equivalent of cords of pulpwood taken into paper mills and newsprint mills.

The next table shows details of forest production for a five-year period on a basis comparable with the previous analysis (logs in true volume):

Forest Production

Product	1964-65	1965-66	1966-67	1967-68	1968-69
Logs for sawing, peeling, pulping, etc.—					
Forest hardwoods m sup ft	645.7	667.9	690.4	r 685.0	695.0
Indigenous softwoods m sup ft	2.8	3.5	3.9	4.5	4.4
Plantation grown pines m sup ft	20.9	25.4	23.6	22.2	21.9
Total logs—quantity m sup ft	669.5	696.7	r 717.9	709.7	721.3
gross value \$'000	12,431	13,105	13,109	r 13,024	13,326
Hewn and other timber including other forest products—					
Firewood—weight '000 tons	431	440	444	377	367
gross value \$'000	1,934	2,083	2,557	2,191	2,426
Other (gross value) (a) \$'000	r 961	r 802	r 962	(b)r 273	132
Total gross value of forest products \$'000	15,326	15,990	16,627	17,209	15,885

(a) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles, tanning bark, etc.

(b) Not comparable with previous years' figures.

Tasmanian and Australian Log Production

In the last table, log production is defined as relating to 'Logs for sawing, peeling, slicing or pulping', (i.e. it includes logs used in sawmills as well as those used for production of woodpulp in newsprint and paper mills). In terms of this definition, Tasmania is a major producer, the State's log production being over 17 per cent of the Australian total in 1968-69; the ranking of the major producers was Victoria with 26.2 per cent and N.S.W. with 21.7 per cent. Considering Tasmania's small relative size and population, it is apparent that forest production is one of its more important contributions to the Australian economy.

Gross and Local Value of Production

The following table gives details of gross and local values of forestry production for a five-year period:

Gross and Local Value of Forestry Production (\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Gross Value (Production Valued at Principal Markets)	15,326	15,990	16,627	17,209	15,885
Less Marketing Costs	2,057	2,154	2,295	2,442	2,467
Local Value (Production Valued at Place of Production)	13,270	13,837	14,332	14,766	13,418

Values Derived From Factory Processing

For statistical purposes, some forest products are treated as passing through two sectors: (i) the forestry sector of primary production; and (ii) the factory sector. This is necessary because the finished product of one sector may become the raw material of another (e.g. logs from the forestry sector pass to sawmills in the factory sector). To view the timber industry as a whole, it is necessary to take account of factory processing. The table shows details of processing in the two most important factory sub-classes—sawmills and paper mills:

Factory Processing of Forest Products, 1967-68
Factory Class X, Sub-class 1—Sawmills
Factory Class XII, Sub-class 9—Paper Making

Item	Sawmills	Papermaking	Total
Factories Operating no.	274	4	278
Average Employment (a)—			
Males no.	2,745	3,110	5,855
Females no.	56	570	626
Total no.	2,801	3,680	6,481
Proportion of all Factory Classes %	8.1	10.6	18.7
Value of Output \$'000	32,425	50,639	83,064
Value of Production (b) \$'000	12,818	24,877	37,694

(a) Average whole year, including working proprietors.

(b) Value of output less recorded costs of manufacture, other than labour.

The previous table does not include factory sub-classes X-2 (plywood mills), X-10 (wall and ceiling boards) or minor processors of untreated forest products; total values of output and production would be increased as much as five per cent by their inclusion. (Further details of factory processing appear in Chapter 8, 'Secondary Industry—Manufacturing'.)

Timber and Timber Products

Mill Production of Timber

Particulars of logs treated and the production of sawn, peeled and sliced timber by sawmills and plywood mills are shown in the following table; the figures have been compiled from the annual factory collections and show the geographical distribution of milling activity (pulpwood treatment is excluded):

Logs Treated and Sawn Timber Produced, 1967-68

Statistical Division	Logs Treated (True Volume)		Sawn, Peeled or Sliced Timber Produced
	Quantity	Proportion of Total	
	'000 sup ft	per cent	'000 sup ft
Hobart	27,813	6.1	12,300
South Eastern	14,361	3.1	5,460
Southern	44,200	9.7	16,466
North Central	28,254	6.2	10,109
North Western	160,423	35.2	60,409
North Eastern	69,077	15.1	26,323
North Midland	48,557	10.6	19,180
Midland	51,607	11.3	19,290
Western	11,716	2.6	5,688
Total	(a) 456,007	100.0	175,225

(a) Hardwood logs, 447,188,000 super feet; softwood logs, 8,818,000 super feet; approximately 37.4 per cent of softwood logs were indigenous, the balance coming from plantations.

The difference between the volume of logs treated and of timber produced is not all waste from the millers' point of view. Admittedly, there is very limited use for sawdust but some offcuts are sold to the wood pulp industry and other waste is docked and sold as firewood.

In the previous table (from which logs cut for pulpwood are excluded), the principal centres of sawmilling activity are shown to be the north-west and north-east; the level of activity in the south can be gauged by adding the Hobart, Southern and Midland divisional figures.

Output and Exports

The following table shows timber production by mills for a five-year period, together with exports of sawn timber:

Production and Exports of Sawn Timber

Particulars	1964-65	1965-66	1967-68	1967-68	1968-69 ^p
LOGS TREATED ('000 Super Feet True)					
Hardwood	439,480	446,145	440,579	447,188	452,595
Softwood	12,906	12,813	11,468	8,818	11,755
Total	452,386	458,958	452,047	456,007	464,350
SAWN, PEELED OR SLICED TIMBER PRODUCED FROM LOGS TREATED (a) ('000 Super Feet)					
Hardwood	172,987	173,622	170,075	171,972	170,279
Softwood	5,086	4,857	4,319	3,253	4,400
Total	178,073	178,479	174,394	175,225	174,679
VALUE OF ROUGH SAWN TIMBER (\$'000)					
Total	15,450	16,239	16,372	16,882	
EXPORTS OF SAWN TIMBER (c) ('000 Super Feet)					
Total	80,446	73,863	79,447	77,897	82,609
VALUE OF EXPORTS OF SAWN TIMBER (b) (\$'000)					
Total	12,811	12,145	13,672	13,492	15,329

(a) Rough sawn timber including that subsequently seasoned and dressed to produce flooring, weatherboards, etc.

(b) Includes dressed and undressed timber.

Comparison

In the treatment of logs as defined in the previous table (i.e. basically of logs for sawmilling) Tasmania processed 12.5 per cent of the Australian total in 1967-68. The Tasmanian volume of logs treated was below that of all States except S.A. but its production of sawn, peeled or sliced timber far exceeds the demand generated by its relatively small population, a factor which accounts for considerable Tasmanian interstate exports of timber.

Employment

The next table shows the number of sawmills and the number of persons employed:

Number of Sawmills and Persons Employed (a)

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Number of Sawmills	305	308	289	279	274
Average Number Employed During Year—					
Males	2,701	2,793	2,880	2,834	2,745
Females	53	57	62	58	56
Persons	2,754	2,850	2,942	2,892	2,801

(a) In mills; excludes those engaged on logging operations.

In recent years a number of small mills, particularly those operated on a part-time basis by orchardists for the cutting of case timber, have gone out of production. At the same time, the larger more efficient mills have intensified their operations, the result being a general rising trend in the number of persons employed by the larger mills.

Production of Wood Pulp and Paper

Details of paper and newsprint production are not available for publication but wood pulp figures are an indicator of activity.

Wood pulp is the basic material in the production of paper, newsprint, etc. and is made by any one of three processes, namely mechanical, chemical, or a combination of the two methods; the last process is referred to as 'semi-chemical'. The basic technological problem in producing satisfactory pulp from some eucalypt species, and from some other pulpwoods, was related to the relative shortness of their wood fibre; in the semi-chemical process, the preliminary chemical treatment of the wood reduces the amount of grinding required and thus prevents excessive fibre destruction. The following table shows production of wood pulp over a five-year period, together with employment details for the industry:

Factory Class XII, Sub-class 9—Paper Making

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Number of Establishments ..	4	4	4	4	4
Average Number Employed During Year—					
Males	2,863	2,887	3,029	3,042	3,110
Females	510	448	527	546	570
Persons	3,373	3,335	3,556	3,588	3,680
Wood Pulp Produced (a) tons	157,413	172,130	181,868	198,566	183,779

(a) Ground wood pulp, chemical and semi-chemical pulp.

Role of the Forestry Commission

The State Forestry Commission is primarily concerned with the conservation of Tasmania's forests; this requires that it should exercise control over the rate at which logs and pulpwood are taken, and also that it should introduce effective measures to ensure regeneration. Other important functions include: (i) fire prevention and suppression; (ii) road construction to give access to forests; (iii) development of plantations. Some concept of the scope of Forestry Commission activities can be obtained from the following table:

Summary—Activities of Forestry Commission (a)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Production of Seedlings '000	1,351	1,876	2,104	2,725	3,038
Plantations—					
Established acres	1,800	3,489	3,251	4,695	4,351
Pruned acres	2,409	2,782	2,324	1,957	1,987
Thinned acres	631	851	597	859	1,021
Firebreaks—					
Constructed .. miles	127	75	67	59	86
Secondary Roads—					
Constructed .. miles	105	81	71	92	75
Improved miles	23	19	12	16	20
Major Roads—					
Constructed .. miles	24	28	19	24	31

(a) Source: Reports of Forestry Commission.

The table below shows the mileage of major and secondary forest access roads maintained by the forestry Commission. Forestry roads are roads originally constructed or improved by the Commission, while 'sawmillers' roads are those which have been constructed by sawmillers and are currently being maintained by the Commission.

**Forestry and Sawmillers' Roads Maintained by the Forestry Commission
at 30 June 1970
(Miles)**

Municipality	Forestry Roads	Sawmillers' Roads	Total
King Island	16.0	..	16.0
Circular Head	134.8	164.2	299.0
Waratah .. .. .	..	53.8	53.8
Wynyard	54.0	41.5	95.5
Penguin	24.9	36.3	61.2
Ulverstone	46.5	19.1	65.6
Kentish	26.3	18.1	44.4
Latrobe	33.2	23.4	56.6
Burnie	9.3	19.8	29.1
Devonport .. .. .	..	..	..
Deloraine	112.2	57.8	170.0
Beaconsfield	21.7	..	21.7
George Town	11.5	..	11.5
Lilydale	51.7	..	51.7
Scottsdale	179.1	5.0	184.1
Ringarooma	93.3	20.0	113.3
Fingal	302.4	..	302.4
St Leonards	22.0	..	22.0
Portland	148.5	..	148.5
Westbury	9.5	8.5	18.0
Esperance	222.5	2.9	225.4
Huon	36.6	..	36.6
Bruny Island	36.2	5.4	41.6
Tasman	25.8	..	25.8
Sorell	10.3	..	10.3
Hamilton	2.1	..	2.1
Strahan	8.5	..	8.5
Total	1,638.9	475.8	2,114.7

The Commission has a responsibility for preventing and fighting forest fires; losses through bush fires fought by the Commission are reported in the following table:

Bush Fires Fought by Forestry Commission (a)

Year	Fires Reported	Area Burnt				Cost of Sup-pression
		State Forest	Other Crown Land	Private Property(b)	Total (c)	
	no.	acres	acres	acres	acres	\$
1963-64	252	19,706	35,352	11,460	66,518	72,624
1964-65	146	4,037	4,701	3,077	11,815	31,828
1965-66	317	33,015	50,489	45,643	129,147	71,918
1966-67	264	83,954	194,979	147,286	426,219	108,018
1967-68	230	15,808	59,023	20,874	95,705	61,032
1968-69	87	3,538	6,055	1,612	11,205	18,722

(a) Source: Reports of the Forestry Commission.

(b) Includes only fires fought to protect adjoining State Forest or timbered Crown Land.

(c) Incomplete; see note (b).

The main revenue of the Forestry Commission is derived from royalties, i.e. charges paid by those taking timber from Crown lands. By law, such revenue is specifically reserved for expenditure on forestry. The next table has been compiled to show the revenue and expenditure of the Commission for the last five years; expenditure exceeds revenue since money from State loan funds devoted to forestry purposes is included in expenditure.

Forestry Commission—Revenue and Expenditure (\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
REVENUE					
Royalties	1,387	1,427	1,480	1,492	1,496
Sale of Forest Products	73	34	32	101	75
Other	39	40	45	9	27
Total	1,499	1,500	1,557	1,603	1,598
EXPENDITURE (a)					
Administration—					
Revenue Collection ..	120	117	113	147	180
Forest Management ..	512	492	412	414	449
General	319	327	313	364	375
Forest Works—					
Road Construction ..	1,086	809	700	702	763
Building and Other ..	80	69	136	66	75
Afforestation and Reforestation	504	789	935	1,020	1,070
Forest Protection (n.e.i.) ..	119	87	112	119	122
Mapping and Surveys	77	73	92	80	92
Land Purchases	10	8	9	2	6
Purchase, Plant and Equipment	158	27	16	24	57
Interest on Advances (b) ..	..	..	257	286	314
Total	2,985	2,798	(c) 3,095	3,226	3,503

(a) Aggregate expenditure from all sources, i.e. Consolidated Revenue, Loan and Trust Funds.

(b) From 1966-67 Forestry Fund Account charged with interest on advances from State Loan Fund; no charge raised in previous years.

(c) Not comparable with previous totals; see note (b).

Commonwealth-State Agreement

The Federal *Softwoods Forestry Agreements Act* 1967 was passed with the specific intention of increasing the rate of softwood plantings in Australia by providing Commonwealth financial assistance to the States. Under the Act each State is allocated: (i) a *base year* area of softwood plantings which is financed by the State; (ii) a *scheduled* area in excess of the base year figure, the excess being financed by special Commonwealth loans. The base year area is constant for each year of the five year programme which commenced in 1966-67.

Main features of the special Commonwealth loans are: (i) repayment of advances, in 50 half-yearly instalments, is deferred until July of the eleventh year after the date on which payment was made to the State; (ii) the State may repay any portion of the advances at any time prior to the date that payment falls due; (iii) the loans are interest free for a period of ten years after which interest accrues on the outstanding balance.

The *base year* areas (financed by the State) of softwood plantings are: N.S.W., 8,100 acres; Vic., 6,000 acres; Qld, 5,200 acres; S.A., 4,500 acres; W.A., 3,000 acres; Tas., 1,940 acres. Tasmania's scheduled softwood plantings (with Australian totals in brackets) for the five years ended 30 June are: (in acres) 1967, 4,100 (40,500); 1968, 4,100 (47,600); 1969, 4,400 (53,300); 1970, 4,600 (56,900); 1971, 4,900 (58,500). In 1968-69 the State Forestry Commission planted 4,351 acres.

The Commonwealth aim is to establish two million acres of pine plantations in the next 40 years and Tasmania's target, as part of the plan, is 200,000 acres.

TASMANIAN WOODCHIP INDUSTRY

Introduction

Woodchips, manufactured from sawmill waste and other timber previously of little or no commercial value, are primarily used for wood pulp production.

The development of a viable woodchip industry in Tasmania was preceded by a period of uncertainty during which, in the absence of stated government policy, as many as six companies were reported to be planning woodchip projects. Due to the amount of forested land concessions already granted to established manufacturing companies, it was obvious that the woodchip proposals would have to be rationalised before the new industry could become a commercial proposition, even considering the vast private acreage available for exploration.

Following feasibility studies and preliminary negotiations with Japanese and other overseas paper producers, three companies: Associated Pulp and Paper Mills Pty Ltd, Northern Woodchips Pty Ltd and Tasmanian Pulp and Forest Holdings Ltd, sought export contracts. The Commonwealth Government policy on the industry is one of non-exploitation. Before the Commonwealth would grant an export licence to a woodchip company, the company was required to negotiate a contract price sufficiently high to support the industry and, also, had to be capable of progressing, within a specified period, from an exporter of the primary product to a pulp manufacturer and exporter.

Contracts

Tasmanian Pulp and Forest Holdings Ltd in November 1968, successfully negotiated an export contract with Mitsui and Company (on behalf of Jujo, one of Japan's largest papermakers), guaranteeing the supply of 600,000

tons of woodchips a year over a 15-year term. The contract price was \$27 a bone dry unit. (A bone dry unit, or b.d.u., is 2,400 lb of woodchips or the equivalent of about two tons of green timber.)

Northern Woodchips Pty Ltd negotiated with the Japanese Pulp and Paper Association. This contract was reported to be worth more than \$100m based on a maximum price of \$22 a b.d.u. The Commonwealth Government refused Northern Woodchips Pty Ltd an export licence claiming that the contract price was too low. It was considered that \$27 a b.d.u. was a reasonable price for Australian woodchips. The contract lapsed following a fruitless re-negotiation period during which the Japanese importers insisted on a price of \$22 a b.d.u. while the Commonwealth Government refused to allow negotiations below \$27.

During 1970, a world trend of reduction in woodchip exports, coupled with impending changes in overseas contracts structures, allowed resumption of negotiations for Australian exports.

Although neither Associated Pulp and Paper Mills Pty Ltd nor Northern Woodchips Pty Ltd had at this stage secured firm contracts, all three companies decided to continue with their proposals and negotiated contracts for erection of plant and facilities. In October 1970, Associated Pulp and Paper Mills Pty Ltd announced that it had successfully negotiated a contract with two Japanese companies (Mitsubishi Shoji Kaisha Ltd and Trimitomo Shoji Kaisha) for the supply of 600,000 tons of green woodchips a year. Late in 1970 Northern Woodchips Pty Ltd obtained Commonwealth approval for the export of 700,000 tons per year. The estimated value the 15 year contract is \$150m.

Projects

Planned initial capital investment by the three companies totals \$13m; Associated Pulp and Paper Mills Pty Ltd and Northern Woodchips Pty Ltd intend investing \$6.5m and \$3m respectively in processing plants at Long Reach, near Bell Bay in northern Tasmania; Tasmanian Pulp and Forest Holdings Ltd is investing \$3.4m in capital equipment at Triabunna on the east coast.

In 1969, Associated Pulp and Paper Mills Pty Ltd completed arrangements with the Port of Launceston Authority for financing and construction of wharf facilities sufficient for vessels of up to 55,000 tons deadweight. Construction of the wharf facilities, chip manufacturing plant and ancillary services began in 1970. The plant is expected to be fully operational in 1972.

The company will draw raw materials for its chipping plant from Crown forest concessions and additional supplies will come from private forest areas and land-clearing operations; it is also hoped to utilise chips produced from sawmill waste. When in full production, the plant will have a capacity of more than 600,000 tons of chips a year.

Northern Woodchips Pty Ltd expects to have its plant completed by August 1971. The initial yearly capacity is to be 500,000 tons of chips. Company officials estimate the project will create employment for about 400 men. Included in the overall project is a plan to use mobile wood-chipping plants at various centres throughout the northern half of the State in addition to the major plant at Long Reach. Raw materials for the major project will come from private land holdings and from sawmill waste. These sources have been estimated by the firm to be sufficient to supply timber for more than 700,000 tons of woodchips per annum.

The Tasmanian Pulp and Forest Holdings Ltd plant will have a capacity of more than 600,000 tons of woodchips a year. Incorporated in the Spring Bay complex will be a 60-inch conveyor belt, one of the largest in the world, which will transport the woodchips from the chipping plant to a stock pile from which they will be pneumatically loaded into specialised bulk carriers of 26,000 tons capacity.

Timber for the project will come initially from a pulpwood concession area extending in a coastal strip from St Helens (110 miles to the north) to Buckland (15 miles to the south). The company has also been granted concessions over reserve areas covering much of central Tasmania. These reserve areas will ultimately be used, provided the Company meets stipulations laid down in the *Pulpwood Products Industry (Eastern and Central Tasmania) Act* 1968. The company will also be permitted to obtain pulpwood from areas in the reserve required by the Forestry commission for silvicultural purposes or by utilising trees removed for the purpose of opening the forest for economic extraction of milling-quality timber.

Re-forestation

The sudden boom in woodchips caused speculation in Tasmania that the industry would achieve denudation of forests on private land with the eventual destruction of this primary resource.

Established industries now use about 600m super feet of timber a year: (i) 415m super feet from Crown land on which there are active re-forestation schemes; and (ii) 185m super feet from private land. When the woodchip industries are established this drain on forests will rise to about 1,500m super feet a year in total. Of this, Crown land will supply about 985m super feet and about 515m super feet will come from private land-holdings.

The woodchip companies are expected to take steps to ensure at least partial re-forestation of private land. This will probably be achieved by paying 're-forestation bonuses' to suppliers, in addition to normal royalty payments, where the supplier agrees to undertake replanting of the area from which the timber was taken.

Forest Regeneration Following Cutting for Woodchip Production

In late 1970, Tasmanian Pulp and Forest Holdings Ltd commenced logging for pulpwood on forested lands controlled by the Forestry Commission on the east coast. When in full production, the annual cut of 500,000 tons of logs will require some 12,000 acres of Crown land per year, spreading initially from south of Buckland to north of St Helens.

This land will be regenerated as it is cut-out with the species of eucalypts native to the areas concerned. Only a very small proportion of the area logged will be converted to pine plantations.

In most cases, the Forestry Commission will confine logging to pre-determined units of around 1,000 acres in size with suitable physical boundaries. Following logging, the remaining 'slash' heads of trees and scrub will be burnt by controlled fire to prepare a suitable seed-bed for the new crop of eucalypts and to prevent the build-up of fire hazards. Over half the areas prepared will be seeded naturally by scattered parent trees left at the time of logging, and where these are not present in adequate numbers, or where the seed crop on them is poor, the areas will be sown immediately after the burn with pelletised eucalypt seed from aircraft, following the system used for some years by the Commission in other parts of the State.

Seed collected from logging areas will enable the selection of the right species to be sown in each area. The Commission maintains reserves of seed to allow for the occurrence of poor seed years, and these reserves will be built-up rapidly when full-scale logging commences in the area.

As well as this seedling regeneration, some areas will be regenerated in part from 'ligno tubers' (a type of fire-resistant, rootstock developed on the seedlings of many species of eucalypts) and from coppice growth from the smaller cut stumps.

On these scattered regeneration areas, both domestic and native animals must be controlled sufficiently during the first three to five years to enable satisfactory eucalypt regeneration to be established.

The rate of cutting is to be so controlled that the whole Crown forest area can be managed to produce pulpwood and sawlogs in perpetuity; the cutting will be distributed to eventually provide a patchwork of age classes of forest over the whole area. Apart from the large areas of young vigorous eucalypt forests that will be regenerated under this system, areas of uncut, older forest will be left distributed through the Crown land forest.

MINING

Introduction

For statistical purposes, mining is taken to cover the operations normally thought of as mining and quarrying (i.e. the removal from underground or surface workings of ores, etc.), the recovery of minerals from ore dumps, tailings, etc. and ore dressing (i.e. concentration and other elementary treatment). It does not include the smelting and/or refining of metallic minerals or the processing of non-metallic minerals (e.g. limestone into cement), and these operations are classified as manufacturing.

In the present Tasmanian economy, three important metals will serve to illustrate the distinction between mining and manufacturing: aluminium, produced at Bell Bay on the Tamar; zinc at Risdon near Hobart; and copper at Mt Lyell on the west coast. In terms of the previous definition, the three metals are considered to be the output of manufacturing and only a small part of their value is attributable to the mining industry in Tasmania. In the case of aluminium, no Tasmanian ores or concentrates are used and no value accrues to the Tasmanian mining industry. A substantial part of the value of the aluminium is, in fact, accounted for by imported materials. Zinc is produced from both imported and locally-produced concentrates, but only the value of the local concentrates produced at Rosebery is included in the Tasmanian mining industry. Until December 1969 blister copper was produced entirely from locally-produced concentrates, the whole operation, from mining the ore to producing blister copper, being integrated at the one location in the Mt Lyell area. Copper smelting has now been discontinued at Mt Lyell, the concentrates being shipped direct to Japan from the Port of Burnie. The extraction of iron ore at the Savage River is taken as part of mining activity but the pellet-making at Port Latta is included in the manufacturing sector.

Sources of Information

(i) *Before* 1968-69, all mining and quarrying statistics were collected on a calendar year basis from the following sources: (i) Bureau of Census and Statistics' annual Census of Mines and Quarries; (ii) quarterly collection conducted by the State Department of Mines; and (iii) information supplied by the Commonwealth Bureau of Mineral Resources.

(ii) From 1968-69 the Bureau's annual collection has been conducted on a fiscal year basis. However, both calendar and fiscal year statistics published by the Bureau will be derived from Mines Department quarterly returns supplemented by information from the Bureau of Mineral Resources.

Historical

Supply and Demand

While Tasmanian farm and factory activity over the years has displayed, in the main, an orderly pattern of growth, mining activity has been subject to frequent and severe fluctuations, the result of changes in supply and demand as reflected in the market price of particular metals. Examples of factors contributing to this relative instability are: (i) *Supply*—the possible fall in prices when major fresh discoveries are worked in other countries; (ii) *Demand*—the possible rise in prices when war, or fear of war, leads to large-scale purchases of particular metals; (iii) *Technological change*—for example, after the invention of the ball point pen, osmiridium, used for tipping fountain pen nibs and once produced in large quantities in Tasmania, suffered a resulting considerable decline in value.

Definition of Mining

Unfolding the record of the various minerals produced in the State is made difficult by the manner in which previous official mining statistics were compiled. In current statistics, a distinction has been made, in broad terms, between mining a mineral and subsequently refining it to obtain its metallic content—the second process is classified as manufacturing up until 1967-68. However, this distinction was not made in earlier statistics and therefore historical comparisons cannot be made with any accuracy. A further difficulty occurs with regard to the value of ores which, in older series, were valued, in the main, according to the world price for their estimated metallic content, irrespective of whether the extraction was carried out in Tasmania itself, in other States or in overseas countries. Thus the earlier historical value series is inflated and does not reflect the true earnings of mineral producers within the State. In the evolution of a proper basis for current mining statistics, the chief requirement was to satisfactorily define a border between mining and factory activities and, for Tasmanian data, this was not accomplished until 1952 when the Bureau of Statistics conducted its first mining census. From 1952 to 1968, the mining census was conducted on an annual basis.

Because of the definitional difficulties just listed, the historical account of mining in the State has been deliberately restricted largely to details of physical production; other measures such as employment, value of output, wages and salaries paid, etc. not being comparable with those used in the current series commencing 1952.

Coal

Early Fields

The site of Tasmania's first mine was on Tasman Peninsula where the convicts from Port Arthur mined 60 tons of coal in 1834. Highest production was 10,400 tons in 1840 but, within three years, the work ceased due to the poor quality of the coal and discoveries at other sites. The island's principal coalfields eventually were opened up in the Fingal Valley, and the following table shows coal production immediately before and shortly after their discovery in 1886:

**Coal Production at Tasmanian Mines, 1885, 1886 and 1890
(Tons)**

Locality (a)	1885	1886	1890
Mersey and Latrobe	2,114	1,400	3,778
Longford .. ..	..	1,230	1,000
Oatlands	700	600	600
Hobart (New Town)	460	936	..
Richmond (Jerusalem)	1,320	605	600
Kingborough	560	500	150
Franklin (Port Cygnet)	1,500	1,300	2,738
Fingal .. ..	..	3,820	44,946
Total	6,654	10,391	53,812

(a) Localities as listed in 1890 in 'Statistics of Tasmania'.

Decline in Production

By 1920, annual production had reached 75,000 tons; by 1950, it exceeded 220,000 tons. The peak production year was 1959-60 with an output of over 300,000 tons but, since then, there has been a decline due to competition from oil (the introduction of diesel locomotives contributed, in minor degree, to the fall in demand but the major factor has been a change from coal to oil fuel in manufacturing industries). Throughout this whole period, from 1886 till today, the mines of the Fingal Valley have been the State's principal source of coal. In 1967, annual Tasmanian production had fallen to 77,000 tons.

The fall in the demand for coal had an adverse effect upon employment in the Fingal Valley, and resulted in an enquiry into the possibility of generating electric power from Tasmanian coal; the subsequent report was not in favour of thermal generation, and considered expansion of existing hydro-electric works the more economic proposition. The recent construction at Bell Bay of Tasmania's first thermal electric station, which will use oil rather than coal as fuel appears to have eliminated any prospect of assistance to the coal mining industry in the Fingal Valley from electric power generation. To alleviate hardship and unemployment brought about by the decline of the industry, the Forestry Commission has begun developing exotic pine plantations in the valley to provide gainful employment. However, the use of coal fuel in industry has been officially encouraged and contracts to supply the Boyer newsprint mill have contributed to a 38.5 per cent increase in production during 1969 to 127,000 tons.

By Australian standards, the State's black coal production has never been on a large scale and even in the year of peak Tasmanian production (1959-60), it represented only one and a half per cent of the Commonwealth total to which N.S.W. contributed nearly 80 per cent. (This total excludes brown coal mined in very large quantities almost exclusively in Victoria.)

Gold

The first appearance of gold mining in *Statistics of Tasmania* dated from 1866 when crushing at Fingal in the north-east produced 347 ounces from 2,872 tons of quartz. In actual fact, gold had been discovered much earlier, in slate rocks near Lefroy in 1849 and then at Mangana near Fingal in 1852, the second find setting off a minor gold rush to the alluvial diggings.

During 1859 the first quartz mine started operations at Fingal; in the same year James Smith (better known as 'Philosopher Smith') found gold at the River Forth, and Peter Lette at the Calder. Reef gold was discovered

in 1869 at Lefroy. The first recorded returns from the Mangana fields date from 1870; Waterhouse, 1871; Hellyer, Denison and Beaconsfield, 1872; Lisle, 1878; Gladstone and Cam, 1881; Minnow and River Forth, 1882 Branhholm, 1883; and Mt Lyell, 1886.

The largest single source of gold was the 'Tasmania Mine' at Beaconsfield which began operating in 1878. The effect of Beaconsfield operations can be judged from the following State gold production figures (in ounces): 1877, 5,777; 1878, 25,249; 1879, 60,155. Employment in gold mining in 1879 was stated to exceed 2,000 men. Peak gold production for the State was reached in 1899 with 83,992 ounces but this was still only a minor contribution—just over 2 per cent—to the Australian total.

Ranked in order of accumulated yield, the State's three principal gold mining centres were Beaconsfield, Mathinna and Lefroy. The 20th century witnessed a decline in Tasmanian gold mining, as such; when the 'New Golden Gate' at Mathinna closed in 1912, State annual gold production had fallen to 37,973 ounces. In 1919, with the closure of the 'Tasmania Mine' at Beaconsfield, annual gold production fell to 7,686 ounces. The Mines Department has recently drilled test bores into the old 'Tasmania Mine' with a view to reopening it. A licence has been granted to Allstate Explorations Pty Ltd to investigate the old mine and drilling is currently being undertaken.

Today there are no gold mines, as such, operating but gold is still produced as a by-product from other minerals, principally concentrates of lead-copper, copper, lead and zinc. The assayed gold content of Tasmanian minerals mined in 1969-70 was 43,558 fine ounces, compared with a Commonwealth total of 653,563 fine ounces (i.e. the Tasmanian proportion had increased to 6.7 per cent).

Tin

In 1871 James ('Philosopher') Smith discovered 'tin oxide' (cassiterite) at Tinstone Creek near Mt Bischoff which was destined to become the greatest tin deposit known in the world. The Bischoff discovery was followed by numerous others, first in the north-east and then at Mt Heemskirk on the west coast. The Mt Bischoff Tin Mining Company, formed to work the deposit, had paid dividends totalling £177 per £5 share by 31 December 1907. Before production ceased, shortly after World War II, Mt Bischoff had yielded more than 80,000 tons of tin ore.

Main production today is centred on Renison Bell and Mt Cleveland on the west coast and Rossarden, Gladstone and South Mt Cameron in the north-east.

In 1969-70, the assayed tin content of tin concentrates produced throughout Australia was 8,750 tons, the Tasmanian component being 5,037 tons. Some concept of the earlier scale of Tasmanian tin mining can be obtained from these export figures: average annual Tasmanian exports of tin, decade ending 1890, 3,800 tons; decade ending 1900, 2,650 tons. A mixture of export and production figures in the decade ending 1910 suggests that tin production had lifted to an annual average of 3,350 tons. In 1920, annual production fell to 1,310 tons and, since then, has often been below 1,000 tons. An expansion of tin mining is now in progress, the 1969 figure (4,818 tons) representing a 55 per cent increase over the 1968 figure (3,103 tons).

Silver

The rush to the Zeehan-Dundas area, where silver-lead ore was discovered in 1882, commenced in 1888 and by 1891, 159 companies and syndicates were operating in the area. Initial rich returns led to the installation of a smelting

plant at Zeehan. However, the rich surface ores were soon depleted; payable ore was not located below 600 feet and the field gradually declined after the closing of the Zeehan smelters in 1909.

The State still produces silver today but mainly as a by-product of copper mining at Mt Lyell and zinc-lead mining at Rosebery; 'pure' silver-lead mining is carried on at Tullah but there is no silver production from the once famous Zeehan fields. In 1969-70, the assayed silver content of Tasmanian mine production was 1,773,710 fine ounces, approximately 6.8 per cent of the corresponding Australian total. N.S.W. and Queensland are the leading producers.

Copper

The history of the Mt Lyell field dates from 1883 when the McDonough brothers and Johannes Karlson discovered the 'Iron Blow' outcrop. Isolation impeded development of the field and the transport problem was not solved until 1899 when the Mt Lyell Company's railway reached Strahan. The following year the North Mt Lyell Company completed a railway between Linda and Kellys Basin. The absurdity of two railways in the same area ended in 1903 with an amalgamation of the two companies.

In 1902 a metallurgical innovation of world importance occurred at Mt Lyell when Robert Sticht perfected pyritic smelting. The new low-cost method led to the establishment of a smelting industry at Queenstown. The smelting plant ceased production in December 1969 and the ore is now shipped direct to Japan. Mt Lyell, for many years Australia's leading copper mine, still ranks high on the list of Australian producers and has increased its annual output of copper in recent years. Recent development at the Mt Lyell mine has led to the resumption of underground mining and to the closure of the famous open cut, the 'Iron Blow'.

In 1969-70, the assayed copper content of Tasmanian mineral production was 21,334 tons, or about 16 per cent of the corresponding Australian total, Queensland being the principal producing State. About 90 per cent of the Tasmanian total derives from Mt Lyell ores but there is also a copper content in the ores mined at Rosebery and Williamsford.

Zinc

The complex Rosebery ores were discovered near Mt Read in 1894 but it was not until 1925, when the Electrolytic Zinc Company of Australasia commenced smelting the Rosebery ores at Risdon, that full-scale development of the field commenced. The Rosebery mines have been in continuous production since 1925, apart from a temporary shut-down in the period 1930-1936 when depressed world zinc prices curbed production.

Mine output comes from three mines: the Rosebery mine at the foot of Mt Reed (90 per cent of total output); the Hercules mine at Williamsford, some 2½ miles south of Rosebery; and the Farrell mine at Tullah, on the Murchison Highway six miles north-west of Rosebery. In 1971, completion of a new shaft at the Rosebery mine, 22 feet in diameter and 2,420 feet deep, will boost total annual capacity of the mining complex to 600,000 tons of ore.

In 1969-70, the assayed zinc content of Tasmanian mine production was 50,449 tons, approximately 10 per cent of the corresponding Australian total; N.S.W. was the major producer of zinc bearing ores. Tasmania is still the leading producer of refined zinc, the recovery process using both local and interstate concentrates. Production constitutes about 65 per cent of the Australian total.

Lead

The mining fields at Zeehan and Dundas had been established to obtain silver from silver-lead ores; lead was produced as a by-product. Silver-lead mining has long ceased on the Zeehan fields but is still in progress at Tullah, a few miles north-west of Rosebery, where the ore is now processed.

Lead is also a constituent of the complex Rosebery and Williamsford ores and these are now the principal source of lead in the State. In 1969-70, the assayed lead content of Tasmanian mine production was 14,766 tons, about 3.2 per cent of the corresponding Australian total; N.S.W. and Queensland are the principal producers.

Tungsten

Tungstic oxide (WO_3) occurs in two forms: in scheelite (calcium tungstate) and wolfram (iron manganese tungstate). There is a marked distinction between the mining of scheelite and of wolfram. Whereas scheelite in Tasmania is mined for its WO_3 content, wolfram is usually found in association with tin. Production of wolfram began in 1906 at Moina in the north-west but most now comes from mixed tin-wolfram mines in the Avoca area. The tin-wolfram combination is a good basis for operations because producers can stockpile their wolfram concentrates when tungsten prices are unfavourable.

Australia's principal domestic producer of tungstic oxide is King Island Scheelite (1947) Ltd from its mine at Grassy. A planned \$10m expansion programme will double current annual production capacity to approximately 600,000 tons of scheelite.

In 1969-70 the assayed tungstic oxide content of Tasmanian mine production was 1,542 tons; this was 66 per cent of the Australian total. Record high world prices were reported during 1970 as good quality tungsten is in short supply in overseas markets.

Sulphur

There are no known deposits of elemental sulphur in Australia, but its use is of vital importance in the heavy chemical and fertiliser industry, the principal form being as sulphuric acid. The sulphur content of the Mt Lyell and Rosebery ores is used to manufacture this acid. Mt Lyell pyritic ore is concentrated and exported, while the Rosebery zinc concentrates are used to produce sulphuric acid as a by-product at the Risdon zinc plant. In 1968-69 the assayed sulphur content of Tasmanian mine production was 50,575 tons,

In May 1970, a \$14m sulphuric acid plant was opened at Burnie as a joint venture by Mt Lyell Mining and Railway Company Ltd and Electrolytic Zinc Company (A/asia) Ltd using waste pyrites railed from the Mt Lyell and Rosebery mines. Initial annual output is estimated at 420,000 tons.

Iron Oxide and Iron Ores

Tasmania has large deposits of iron ore, the principal use until recently being for oxidised ore in the local manufacture of cement. However, in 1956, the Tasmanian Department of Mines, in conjunction with the Commonwealth Bureau of Mineral Resources, commenced a series of geological and geophysical surveys followed by drilling. A large iron ore deposit at the Savage River attracted the attention of Australian-American interests, the project being the conversion of the ore to a slurry and its transfer by pipe-line and pumping to Port Latta, near Stanley, for shipment to Japanese ports in pellet form. This development is described in some detail in the 1969 issue of the

Year Book. During 1969, the Savage River mine produced 1,962,849 tons of dry concentrate with an assayed iron content of 1,366,397 tons, and produced 1,908,215 tons of pellets with a value of \$24.1m.

Mineral Exploration

Introduction

The ore bodies in the areas leased to mines may be large but it is inevitable that they will be exhausted at some time in the future; rather than passively wait for this event, owners of operating mines press on with exploration outside the boundaries of their leases, and in this activity they are joined by exploration companies. In Tasmania, there has been concentration on relatively small areas where geological, geochemical and geophysical surveys have indicated favourable conditions for the occurrence of mineral deposits.

Mineral Exploration Areas and Operators

By June 1970, the Mines Department had issued 120 exploration and special prospectors' licences, covering 21,887 square miles (almost 93 per cent of the State's total area).

Companies engaged in mineral exploration outside mine leases are: Aberfoyle Tin N. L., A.C.I. Operations Pty Ltd, Allstate Explorations N.L., Alstergren Pty Ltd, Associated Pulp and Paper Mills Ltd, Australian Paper Manufacturers Ltd, B.M.I. Mining Pty Ltd, Broken Hill Pty Company Ltd, Cleveland Tin N.L., Ltd, Comstaff Pty Ltd, Eastern Tin N.L., Electrolytic Zinc Company (A/asia) Ltd, Hawkes Alluvial Tin Ltd, Heazlewood Nickel Prospecting Syndicate N.L., John Hood Pty Ltd, Inland Explorations Pty Ltd, Industrial and Mining Investigations Pty Ltd, Industrial Sands Pty Ltd, King Island Scheelite (1947) Ltd, Louisa Mining Corporation N.L., McIntyre Mines Aust. Pty Ltd, McLaren Prospecting Syndicate N.L., Milstern (Beechcroft) Pty Ltd, Minefields Exploration Pty Ltd, Mineral Supplies, Minops Pty Ltd, Mornington Pty Ltd, Mount Lyell Mining and Railway Company Ltd, Naracoopa Rutile Ltd, Pickands Mather and Company International, Pluton, Portland Holdings Pty Ltd, Quest Exploration Pty Ltd, RB Mining Pty Ltd, Renison Ltd, Rockford Pty Ltd, Scamander Mining Corporation N.L., Storeys Creek Tin Mining Co. N.L., Sub-Oceanic Minerals N.L., Tasminex N.L., Texins Development Pty Ltd. In addition, several mainland mining groups are engaged in mineral investigations in Tasmania under either options or other arrangements with individual licence holders and mining lessees.

Interest in mineral exploration in Tasmania has been at a high level in recent years. Companies, which have been engaged in exploration for a considerable time are being restricted to areas where investigations have indicated that a more intensive search is justified. This has released areas for exploration by other companies which in some cases employ new investigation techniques.

Drilling by Mines Department

During 1969 the Mines Department employed its drilling plants in boring tin alluvials in the Gladstone district, lode tin deposits at Waratah, gold reefs at Alberton and coal deposits at Mt Nicholas. Water investigations were undertaken in the Longford and Scottsdale districts as well as testing of clay deposits and building foundations in the Launceston area.

Petroleum Exploration

In April 1970 there were three licences and eleven permits in force for off-shore oil exploration covering approximately 58,000 square miles of Tasmanian waters to the limits of the continental shelf.

In 1969 and early 1970, six off-shore wells were drilled in Tasmanian waters by Esso-BHP, two each in the Gippsland, Otway and Bass Basins. Four wells proved to be dry and two wells, Pelican A1 and A2, in the Bass Basin about 50 miles north of Burnie, encountered several shows of hydrocarbons. The Pelican wells were plugged pending further studies to evaluate their commercial potential. The hydrocarbon shows are encouraging as they are the first to be found in the Bass Basin and in Tasmanian waters.

The following table shows details of exploration carried out in Tasmania:

Petroleum Exploration, Tasmania

Particulars	Up to 1966	1966	1967	1968	p1969	Total to 1969
Wells Drilled no.	22	1	5	2	3	3
Depth .. feet	28,324	6,607	11,881	14,332	9,770	70,914
Private Expenditure (a) \$'000	1,903	1,863	2,893	1,496	2,740	10,895

(a) Excludes Commonwealth government exploration subsidy.

The above section 'Mineral Exploration' was prepared from information made available by the Mines Department and the Petroleum Information Bureau (Australia).

STATISTICS OF MINERAL PRODUCTION

Source of Data

Statistics relating to quantities of minerals produced (including assay metallic content) are, in the main, obtained from the State Mines Department and are supplemented, where necessary, with data obtained from the annual census of mines and quarries conducted by the Bureau of Census and Statistics, and from the Commonwealth Bureau of Mineral Resources.

Metallic Minerals

The table that follows shows the quantity of metallic minerals produced in Tasmania for a five-year period. In general, the minerals are shown as concentrates except the item reading 'copper ore':

Metallic Minerals—Production

Mineral	1965	1966	1967	1968	1969
Tons					
Copper Concentrate	48,740	55,981	55,600	54,600	59,940
Copper Ore	8,262	11,112	8,422	5,056	5,754
Copper Precipitate	13	66	90	123	61
Copper-Tin Concentrate .. ..	..	..	..	877	3,303
Iron Ore .. ..	..	..	..	708,399	1,962,849
Iron Oxide	3,524	2,797	7,866	12,780	11,117
Lead Concentrate	13,565	14,462	13,766	13,352	13,596
Lead-Copper Concentrate	10,424	12,083	12,227	12,558	12,901
Pyrite Concentrate	46,912	61,006	59,714	42,304	28,535
Rutile Concentrate .. ..	..	..	..	..	5,239
Tin Concentrate	1,493	1,510	2,352	5,154	8,072
Tungsten Concentrates—					
Scheelite Concentrate	1,150	1,307	1,200	1,460	1,530
Wolfram Concentrate	487	497	435	484	601
Zinc Concentrate	77,715	83,761	81,751	82,458	84,255
Zircon Concentrate .. ..	..	..	..	..	6,096
Ounces					
Gold (not in Concentrates) ..	108	82	160	118	144

Assayed Content

In the following table, the various concentrates have been grouped to show their content in terms of individual metals. The contents stated are as determined by assay and include all pay metals and metals which are a refiner's prize; totals compiled on this basis contain no allowances for losses in smelting and refining and therefore, in general, exceed the quantities actually recoverable. The table refers exclusively to minerals mined in Tasmania and excludes minerals imported for smelting and refining:

Assayed Contents of Metallic Minerals Produced

Mineral	1965	1966	1967	1968	1969
COPPER (Tons)					
Copper Concentrate	13,376	14,831	15,243	14,510	16,251
Copper Ore	367	563	406	181	86
Copper Precipitate	4	15	20	26	16
Copper-Tin Concentrate .. ..	..	..	..	169	570
Lead Concentrate	78	90	74	95	108
Lead-Copper Concentrate	1,085	1,196	1,250	1,333	1,378
Zinc Concentrate	258	310	270	287	276
Total	15,168	17,005	17,263	16,601	18,685
GOLD (Fine Ounces)					
Copper Concentrate	8,180	8,706	8,970	8,837	10,487
Copper Ore	132	151	117	48	52
Lead Concentrate	3,166	3,339	2,475	3,141	3,821
Lead-Copper Concentrate	18,732	21,430	23,169	21,553	22,908
Zinc Concentrate	2,589	2,802	2,637	2,812	2,846
Other Sources	98	79	151	107	132
Total	32,897	36,507	37,519	36,498	40,246
IRON (Tons)					
Iron Ore .. ..	..	..	..	494,525	1,366,397
LEAD (Tons)					
Lead Concentrate	7,966	8,447	8,098	7,841	7,911
Lead-Copper Concentrate	3,858	4,497	4,603	4,682	4,580
Zinc Concentrate	2,414	2,634	2,431	2,390	2,415
Total	14,238	15,578	15,132	14,913	14,906
SILVER ('000 Fine Ounces)					
Copper Concentrate	50	60	72	82	79
Copper Ore	3	11	10	4	2
Lead Concentrate	344	369	344	362	353
Lead-Copper Concentrate	1,035	1,108	1,114	1,054	1,054
Zinc Concentrate	242	286	259	248	255
Total	1,674	1,834	1,799	1,749	1,743

Assayed Contents of Metallic Minerals Produced—*continued*

Mineral	1965	1966	1967	1968	1969
SULPHUR (Tons)					
Lead Concentrate	2,768	2,924	2,790	2,678	2,693
Lead-Copper Concentrate	2,774	3,160	3,081	3,260	3,373
Pyrite Concentrate	22,893	29,344	28,827	20,536	13,525
Zinc Concentrate	25,539	27,368	26,785	26,600	27,109
Total	53,974	62,796	61,483	53,074	46,700
ZINC (Tons)					
Lead Concentrate	2,303	2,500	2,304	1,730	2,442
Lead-Copper Concentrate	1,202	1,391	1,342	1,414	1,445
Zinc Concentrate	42,805	45,960	45,211	45,002	46,207
Total	46,310	49,851	48,857	48,146	50,094
TIN (Tons)					
Tin Concentrate	1,027	1,031	1,529	2,103	4,818
TUNGSTEN OXIDE (WO ₃) (Tons)					
Scheelite Concentrate	822	941	863	1,056	1,093
Wolfram Concentrate	355	365	320	347	435
Total	1,177	1,306	1,183	1,403	1,528
CADMIUM (Tons)					
Zinc Concentrate	70	75	73	74	76
MANGANESE (Tons)					
Zinc Concentrate	233	254	243	246	254
TITANIUM OXIDE (Tons)					
Rutile Concentrate .. ..	..	..	..	..	4,933
ZIRCON (Tons)					
Zircon Concentrate .. ..	..	..	..	..	5,964

Fuel Minerals (Coal)

The only fuel mineral mined in Tasmania is coal; details of production are shown for a five-year period:

**Production of Coal in Tasmania
(^{'000} Tons)**

Description	1965	1966	1967	1968	1969
Coal, Black—					
Semi-anthracite	2	2	2	2	2
Bituminous	100	80	75	89	126
Total	102	83	77	91	127

Although imported fuel oils are tending to replace coal in a number of applications production of coal increased again in 1969, stimulated by a slight rise in industrial demand.

Non-Metallic (Excluding Fuel) Minerals

The quarrying of limestone is the earliest recorded activity in the field of non-metallic mineral mining in the State, burnt lime being sought as a base for building mortar. Production has gradually increased to meet a steady demand for limestone in the making of cement, in various chemical and metallurgical processes and in the manufacture of calcium carbide; limestone also is used as a source of agricultural lime. Large exports of limestone were made in the period 1918-1947, when B.H.P. Co. Ltd operated quarries at Melrose on the North-West coast.

The next table shows the Tasmanian production of non-metallic minerals for a five-year period:

**Non-Metallic (Excluding Fuel) Minerals Production
(Tons)**

Mineral	1965	1966	1967	1968	1969
Clays—					
Brick and Shale	185,623	165,546	153,574	160,104	165,129
Other	36,070	72,875	42,208	63,099	72,052
Dolomite	1,145	2,606	2,143	2,534	1,515
Limestone (a)	338,414	344,734	348,449	495,811	550,074
Ochre	40	65	97	11	79
Pebbles	920	895	1,237	1,214	1,023
Silica (b)	10,393	5,417	13,016	13,238	27,860

(a) Excludes quantities used directly as a building or road construction material.

(b) For glass, chemical, etc. manufacturing.

Construction Materials

In addition to the types of mining and quarrying previously described, there is the quarrying of construction materials (for buildings, roads, etc.) such as crushed and broken stone, gravel and sand. This type of activity also is taken into account when placing a value on the output from mines and quarries, measuring their level of employment, etc.

Mining Industry Statistics

In the earlier sections of this chapter, the data on mining and quarrying have been confined to physical production and metallic content by assay, but other measures such as the level of employment, values of output, etc. are also available. A definition of the field of activity classified as 'Mining and Quarrying' appears as an introduction to the 'Mining' section of this chapter.

The following table gives details of employment in mines and quarries for a five-year period:

Employment in Mines and Quarries (a)

Particulars	1964	1965	1966	1967	1968
Number of Mines and Quarries	42	46	51	42	44
Persons Employed (b)—					
Working Proprietors ..	16	20	12	6	7
Salaried Employees—					
Above Ground ..	288	330	469	614	543
Below Ground ..	75	60	77	79	93
Wage Earners—					
Above Ground ..	1,449	1,479	1,693	1,876	1,950
Below Ground ..	683	685	676	727	770
Total Workers ..	2,511	2,574	2,927	3,302	3,363

(a) Mines and quarries employing four or more persons.

(b) On last full working day of year shown.

In addition to the 44 mines and quarries, a further 124 mines and quarries operated in 1968, each employing less than four persons.

The relative insignificance of these small mines and quarries can be judged from the fact that in total they accounted for only seven per cent of the total number of persons employed in all mines and only 3.1 per cent of the total value of output of all mines. The five largest Tasmanian metal mines accounted for 70 per cent of the employment and 84 per cent of the value of output.

Values of Output and Production

Value of Output is the selling value at the mine or quarry (i.e. exclusive of transport costs from mine or quarry to the point of sale). Value added by reduction of ores, concentrates, etc. to metals is excluded.

Value of Production is the selling value at the mine or quarry *less* the cost of power, fuel and light and the cost of certain materials and stores such as timber, explosives, etc. No allowance is made for depreciation or costs of maintenance.

The next table gives details of value of output, value of production and costs data for mines and quarries employing four or more persons:

Mines and Quarries (a)—Value of Output; Value of Production; Costs (\$'000)

Particulars	1964	1965	1966	1967	1968
Value of Output	24,109	27,929	r 33,504	33,614	43,814
Less Cost of Power, Fuel and Light used	786	785	844	1,069	1,815
Less Other Costs (mainly materials)	5,965	7,801	7,791	8,308	10,436
Value of Production (b) ..	17,358	19,343	r 24,868	24,238	31,563
Salaries and Wages Paid (c)—					
Salaries	1,264	1,305	1,832	2,723	2,513
Wages (d)	6,819	7,604	8,045	9,126	10,062
Total Salaries and Wages	8,083	8,909	9,877	11,849	12,574

(a) Mines and quarries employing four or more persons.

(b) The cost of labour is *not* deducted in determining the value of production.

(c) Exclusive of drawings by working proprietors.

(d) Net amount after deducting value of explosives sold to own employees.

The previous tables on employment, output, etc. have been restricted to data obtained from mines and quarries employing four or more hands, this size level providing a basis for uniform mining statistics in all Australian States. However, the annual mining census in Tasmania seeks information from all engaged in mining and quarrying and includes operations with less than four persons employed. The following table shows the value of output for all mining and quarrying operations and also the contribution of specific types of activity:

All Mines and Quarries (a)—Value of Output
(\$'000)

Particulars	1964	1965	1966	1967	1968
Metal Mining	21,600	25,349	30,187	31,102	41,115
Fuel Mining	649	430	362	322	371
Non-metal (excluding Fuel) Mining (b)	864	744	732	611	690
Total Mining	23,113	26,523	31,281	32,035	42,175
Construction Material Quarrying	1,935	2,475	r 3,280	2,652	2,783
Total Mining & Quarrying	25,048	28,998	r 34,561	34,688	44,958

(a) Includes output of mines and quarries employing less than four persons.

(b) Includes clays, dolomite, silica, limestone, etc.

Smelting and Refining of Metals

The value of output of mining and quarrying is defined as the selling value of the product at the mine or quarry (e.g. in metal mining, usually the selling value of specific concentrates at the mine). Earlier, reference was made to the fact that Tasmanian manufacturing industry includes the extraction and refining of metals, not only from locally produced ores and concentrates, but also from those that have been imported; in actual fact, extraction and refining in Tasmania employ more persons than mining and result in greater values, both of output and of production. The following table is compiled from factory statistics to illustrate this point:

Non-Mining Activity—Extracting and Refining Metals
Factory Class IV, Sub-class 5—Values of Output, Production, etc.

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Factories no.	4	4	4	4	4
Average Workers (a) no.	3,444	3,394	3,404	3,565	3,455
Value of Output \$'000	66,238	81,336	83,049	91,473	83,374
Value of Production (b) \$'000	24,065	27,185	28,792	36,230	33,137

(a) Average whole year, including working proprietors.

(b) Value of output less recorded costs of manufacture, other than labour.

In the previous table, the principal metals included are: copper (from local ores), zinc and cadmium (from local and imported ores), aluminium (from imported bauxite) and ferro-manganese alloy (from imported ores).

The value of production in the factory table does not duplicate values already recorded in the mining sector since the cost of the basic raw materials—ores or concentrates—is one of the recorded costs of manufacture deducted from the value of output.

The next table gives details of the production of zinc and copper by refinery processes:

**Non-Mining Activity—Production of Zinc and Copper
(Tons)**

Year		Refined Zinc	Copper (a)	Year		Refined Zinc	Copper (a)
1963-64	.. ..	138,610	11,790	1966-67	.. ..	143,917	14,627
1964-65	.. ..	138,779	12,125	1967-68	.. ..	129,789	14,062
1965-66	.. ..	143,911	13,912	1968-69	.. ..	148,707	14,392

(a) Refined copper to 1964-65; blister copper from 1965-66. In October 1965, the Mt Lyell refinery was closed down and the blister copper was thereafter shipped to Port Kembla (N.S.W.) for refining. In December 1969, the Mt Lyell copper smelters closed down.

Aluminium Production

The refinery for the production of alumina and refined aluminium is situated at Bell Bay on the River Tamar. The choice of Tasmania was determined by the availability of large supplies of relatively cheap hydro-electric power. Production of alumina commenced in February 1955, and of refined aluminium in September 1955. Published statements indicate that the capacity of the plant, in terms of primary aluminium, was lifted to 35,000 tons in 1962 and to 52,000 tons in 1963; more recent statements indicate that annual capacity is 73,000 tons.

Assistance Provided by Mines Department

The Department of Mines provides financial assistance to mining lessees for the purchase of plant and machinery, for sinking, repairing or de-watering of shafts, for construction of dams and water races, for testing and proving a deposit of any mining product, for developmental work, and for diamond and other types of drilling. The Department has available for hire percussion and diamond drills for exploration, as well as complete plant for small shaft sinking and tunnelling. Other assistance is rendered to the industry in the form of geological and engineering advice, through ore-dressing research into metallurgical discoveries, and the selection and design of treatment plant.

FISHERIES

Description of Main Fish Varieties

This section is devoted to a discussion of the important species in the Tasmanian fishery. These species are not all scale fish but include elasmobranchs (sharks), molluscs (scallops, oysters, abalone), and crustaceans (crayfish). The Tasmanian fishery involves about 1,160 licensed fishermen in 566 vessels, and in 1968-69 harvested approximately 6,600 tons of fish, molluscs and crustaceans. The catch is composed of about 40 types of which six—rock lobster, shark, snoek (barracouta), abalone, scallop and salmon—are of major importance (about 96 per cent of the catch). Another type, the tuna, may have great potential for development.

The State Government exercises control over the taking of fish through the Fisheries Division (saltwater fisheries) and the Inland Fisheries Commission (freshwater fisheries). The majority of types discussed in this section are numbered according to the code prepared by the Fisheries Division of the Department of Primary Industry on behalf of the Commonwealth/State Fisheries Conference.

The description of the types of fish include their common name and scientific names.

Eels (*Anguilla australis occidentalis*-035)

The commercial freshwater fishery for the short-finned eel was established in 1965 and the catch for 1968-69 was 35,000 lb. Since accumulated stocks are now generally depleted, it is expected that the annual catch will stabilise at the current level. This activity is regulated by the Inland Fisheries Commission.

Whitebait (*Lovettia sealii*-076)

The catching of whitebait comes under the control of the Inland Fisheries Commission. Commercial fishing began during 1941 and 1942 and reached a peak in 1947 when over a million pounds were caught. The canning of whitebait ceased in the early 1950s and the annual catch declined to a few thousand pounds; however, in 1968-69, it had increased to 82,000 lb, mainly due to closer supervision of the fisheries by the Commission and a limit placed on the number of licences. The catch is sold both fresh and frozen.

Flounder and Sole (*Lophonectes gallus*, *Paraplagusia unicolor*, *Pseudorhombus tenuirastrum*; all species-151)

The three species in the local catch are the Crested Flounder (*Lophonectes gallus*), the Deepwater Flounder (*Pseudorhombus tenuirastrum*) and the Lemon-tongued Sole (*Paraplagusia unicolor*).

Cod (*Physiculus barbatus*-201)

The family Gadidae, the true cods, is represented in Tasmania by the Southern Rock Cod (*Physiculus barbatus*). The Southern Rock Cod lives in rocky situations offshore and because of this and its benthonic habits, it is almost always caught on hand-lines. The fish is readily distinguishable by the presence of a fleshy barbel on the lower jaw. Although this group includes the most important commercial fish after the herring in the Northern Hemisphere, it is not a commercially important fish in Tasmania.

Tuna and Mackerel (*Thunnus thynnus maccoyii*-301; *Thunnus alalunga germo*-303; *Katsuwonus pelamis*-315; *Auxis thazard*)

There are four species of tuna found in Tasmanian waters. They are:

- (i) Southern Blue Fin Tuna (*Thunnus thynnus maccoyii*)—a large chunky fish tapering sharply towards the tail. This tuna may reach nine to 10 feet in length and 1,500 pounds and quite commonly ranges from 500-800 pounds in Australian waters. However, the average commercial fish is about 50 pounds.
- (ii) Albacore (*Thunnus alalunga germo*)—a chunky robust fish tapering sharply to the tail. Size—up to three and a half feet and 60 pounds but averaging five to fifteen pounds.
- (iii) Striped Tuna or Skipjack (*Katsuwonus pelamis*)—plump, robust, tapering sharply to the tail behind the second dorsal and anal fins. Size—may grow up to 12 inches and weigh 25 pounds, but normally five to ten pounds.
- (iv) Frigate Mackerel or Leadennall (*Auxis thazard*)—elongated and slightly compressed body. The frigate mackerel is the smallest of the tuna group of fishes and seldom grows larger than three pounds.

A large-scale tuna fishery for Tasmania may be possible in the future but its development has been slow due to the large capital investment involved. The method of fishing in Australia is usually by polling or trolling, using artificial lures when they are effective, or live bait of pilchards, etc. The whole of the catch is usually canned.

Barracouta (Snoek) (*Leionura atun*-335)

The barracouta (generally referred to as 'couta) belong to a group of fishes which includes Snake Mackerels and should not be confused with the savage Barracuda (*Agrioposphyraena barracuda*) of the West Indies. The barracouta can grow to four feet six inches and 10 pounds but averages two and a half to three feet and three to five pounds.

The fish is of major importance to the Tasmanian fishery and occurs in large numbers but is subject to pronounced seasonal fluctuations. It is a fish of good edible quality. Commercial fishermen use mainly 'jigs' or trolling (A jig is a rod attached to a short line or chain with a barbless hook; when the fish strikes it is jerked on to a chute, frees itself, and slides into the well.)

Until May 1970, a ban on the export of frozen barracouta had been imposed by the Department of Primary Industry which claimed that a high degree of parasitic infestation and a condition known as 'miliness' made this fish unsuitable for export. The lifting of this ban has resulted in several Tasmanian processing firms sending sample packs to Japan with the purpose of attracting orders. It has been estimated that up to 10,000 tons of frozen barracouta might eventually be exported each year.

Mullet (*Mugil cephalus*-351; *Aldrichetta forsteri*-370)

In Tasmania, there are two species of mullet; the Sea Mullet (*Mugil cephalus*) and the Yellow Eye Mullet (*Aldrichetta forsteri*). The mullet is a very common fish in Australian waters but it is not important commercially in Tasmania due to its rather variable edible qualities. Most fish are captured commercially by beach seining; anglers find the yellow eye mullet relatively easy to catch but not the sea mullet.

Trevally (*Usacaranx nobilis*-401)

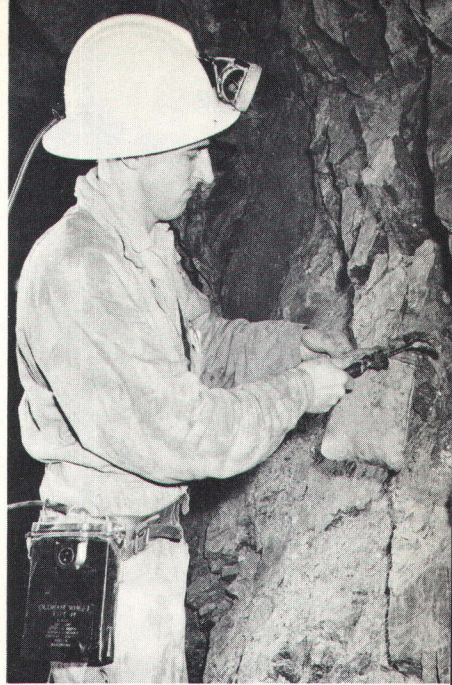
The trevally (snot gall trevalla) is a common school fish around the Tasmanian coast; the fish normally does not exceed 22 inches in length. When freshly caught, the fish is of excellent quality and edible standard, its flesh white, tender and delicately flavoured. However, it does not keep well and should be gutted soon after capture. It is commonly caught by gill or mesh nets set close inshore amongst kelp; it can also be caught by line.

Salmon (*Arripis trutta*-490)

The Australian salmon is not a true salmon and is completely unrelated to the salmon of the Northern Hemisphere. It probably received this name from the early colonists who confused the fish with the true salmon because of a superficial resemblance and its fighting qualities when hooked. It is commonly referred to as the native, colonial or black back salmon. The fish is a major commercial species for Tasmanian fishermen: however, the recent decline in production figures can be attributed to the withdrawal from Tasmanian waters of a large-scale fishing company. Most salmon are captured commercially by beach seine nets. For the angler, it is one of the finest small-game fish in Australian waters.

Trumpeter (*Latridopsis forsteri*-536, *Latris lineatus*-535)

This fish is represented in Tasmania by the Bastard or Silver Trumpeter (or simply Trumpeter)—*Latridopsis forsteri*, and the Striped Trumpeter—*Latris lineatus*. Both are found near offshore reefs but the striped trumpeter is now mostly restricted to deep waters. The silver trumpeter is caught in gill nets and the striped by hand lines. The striped trumpeter is highly prized and is recognised as one of the best table fish in Australia.



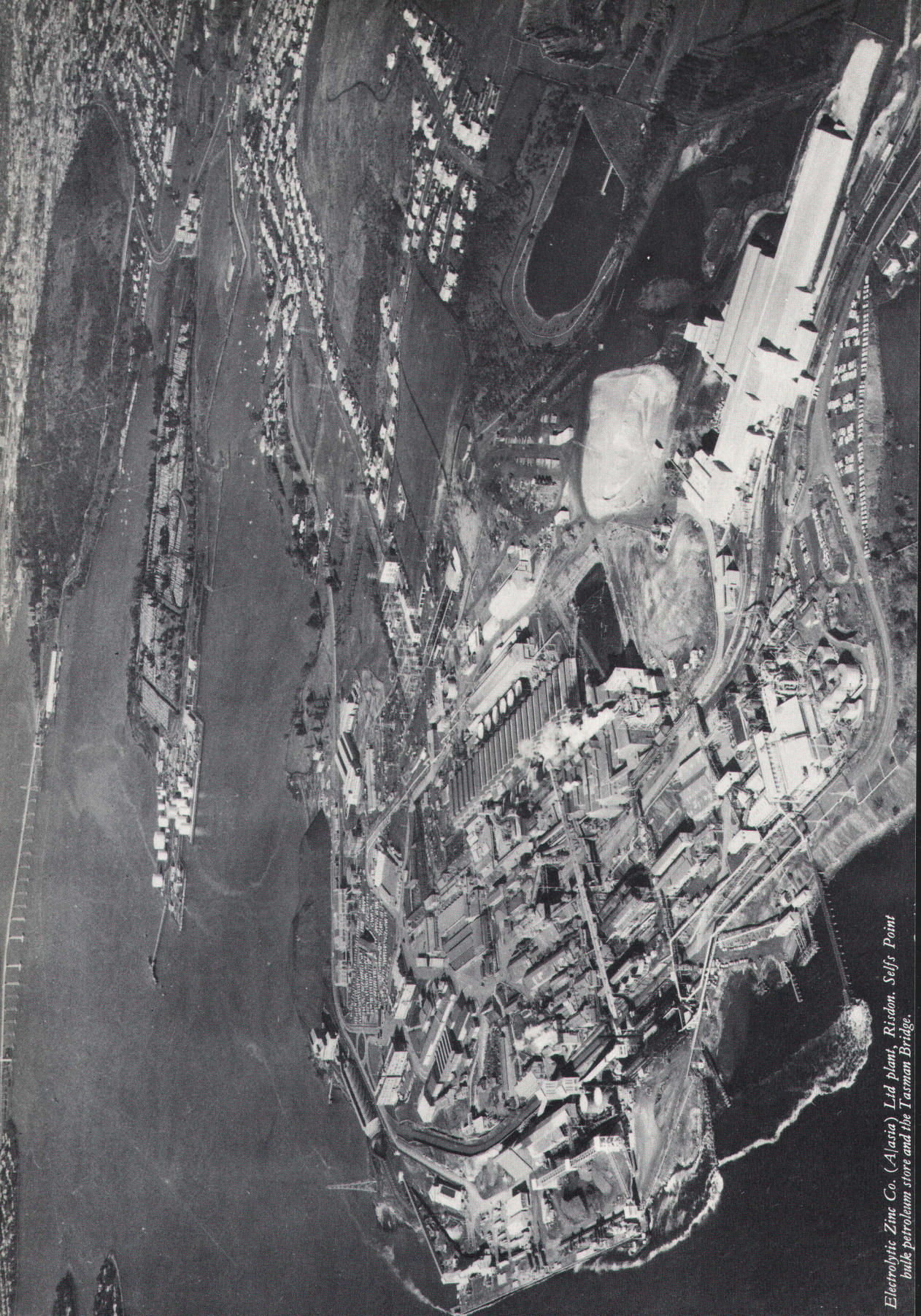
(Dept of National Development)

Underground geologist, taking ore samples

Drilling Jumbo, Rosebery Mines

(Dept of National Development)





*Electrolytic Zinc Co. (Alasia) Ltd plant, Risdon. Self's Point
bulk petroleum store and the Tasman Bridge.*

Flathead (*Neoplatycephalus fuscus*-615, *N. richardsoni*-616*N. speculator*-617, *Trudis bassensis*-621, *Levipora laevigata*-625)

The Tasmanian species of flathead of commercial value are:

- (i) The Rock Flathead (*Levipora laevigata*)—may grow to 15 inches in length.
- (ii) The Sand Flathead (*Trudis bassensis*)—grows to 25 inches and two and three-quarter pounds, but usually averages 16 to 17 inches and about one and a half pounds. This is the most important commercial species.
- (iii) The Dusky or Mud Flathead (*Neoplatycephalus fuscus*)—may reach four feet and 28 pounds.
- (iv) The Tiger Flathead (*Neoplatycephalus richardsoni*)—similar in size to the sand flathead.
- (v) The King or Deep Sea Flathead (*Neoplatycephalus speculator*)—very closely related to the tiger flathead.

The flathead, in general, is an excellent edible fish with white, tender and well-flavoured flesh. The fish is a bottom-dweller, although it can be caught by trawlers, the Tasmanian industry is based on hand-lines. The fish are filleted, frozen and exported to the mainland States.

Shark (*Mustelus antarcticus*-651; *Galeorhinus australis*-655)

Tasmania's shark fishery is confined in the main to two fish: the School or Snapper Shark (*Galeorhinus australis*) and the Gummy Shark (*Mustelus antarcticus*). The school shark is reputed to grow to six feet and 170 pounds but there is no authentic record of a fish longer than five feet eight inches. The gummy shark may grow to a length of five to six feet. Although sharks have been fished commercially in Australia for many years, the Tasmanian industry did not begin until the early years of World War II. It has now become established as one of the most important units of the Tasmanian fishery. The fish are caught by the 'long-line' method. Each line consists of a number of 'fleets', each 'fleet' carrying 100 to 200 hooks. The total number of hooks may go as high as 1,800. Each boat carries a number of lines which can be set individually or linked together.

Unlike the scale and bony fish and some other sharks, these two varieties bear their young alive and do not lay eggs. Mating usually takes place from May to June with the young 'pups' born about December. The average litter is 28.

Garfish (*Hemiramphus melanochir*-712)

The Australian garfish belong to the family Hemiramphidae, fish of this family being called 'half-beaks' in the U.S.A. The garfish may reach a length of 18 inches, but usually average about 12 inches. Fishing is concentrated from March to April, with most fish being caught in seine nets from sheltered ocean beaches.

Rainbow Trout (*Salmo gairdneri*-775)

In 1964, the first commercial trout farm was licensed and rainbow trout are raised in holding ponds using water from the Brid River (at Bridport, on Bass Strait). The fish are fed dry pelletised food with raw protein supplement until large enough for killing. There are, of course, rainbow and brown trout in Tasmanian lakes and rivers (introduced as exotic species) but these may only be fished for by sportsmen with a licence at times and places regulated by the Inland Fisheries Commission.

Southern Rock Lobster (*Jasus lalandei*-780)

The rock lobster is by far the most important unit in the Tasmanian fishery in terms of monetary return. The more common name of 'crayfish' is still widely used in fishing circles, although the term 'Southern Rock Lobster' has been recently adopted for statistical and other official purposes.

The rock lobsters are caught in traps which are hemispherical, mainly made of cane and bush sticks and called pots. The pots are baited with fish or flesh and 'shot' from dinghies or directly from the boat. The boats range from 20 feet to 70 feet long, most having diesel engines and auxiliary sails. They operate all round the Tasmanian coast, including the Bass Strait Islands, as seasons permit and the pots are set in from one to 50 fathoms of water.

The rock lobsters are boiled and either sold locally or exported to New South Wales and Victoria, or overseas to the United States. The whole fish is usually sold in Australia but only the tails, which contain most of the edible meat, are sent to the U.S.A. in uncooked frozen form.

Scallop (*Pecten meridionalis*-835; *Equichlamys bifrons*-836
Mimachlamys asperimus-837)

The Tasmanian scallop industry is based on the Commercial Scallop, *Pecten meridionalis*. There are two other species found, the Queen Scallop, *Equichlamys bifrons*, and the Doughboy Scallop, *Mimachlamys asperimus*.

The fishery has shown three major phases:

- 1904-1918** An initial period in which fishing (by dredging) was confined to the Derwent estuary.
- 1918-1960** A period of varying but generally heavy commercial exploitation of beds in the D'Entrecasteaux Channel. This was the time when the fishery developed into an important primary industry.
- 1960-1970** The development of the oceanic beds on the east and north-east coasts in deeper water and the decline of the D'Entrecasteaux Channel beds. During the latter part of this period, there has been a drastic fall off in the catch from 4.7m lb in 1961-62 to 276,000 lb in 1968-69.

Oyster (*Ostrea angasi*-831; *Crassostrea gigas*-828)

There are two types of oyster found in Tasmania—the Mud oyster, *Ostrea angasi*, which is a native of the State, and the Japanese (or Pacific Oyster), *Crassostrea gigas*, which was first introduced into the State in 1947. The Tamar River contains the only self-reproducing stocks in Australia of this latter species. An oyster farm in the Tamar estuary commenced production in 1967-68 and the first cultivated Pacific Oysters became available for market in April 1970. By mid-1971, this farm expects to have 90,000 sticks under cultivation (one 'stick' carries about six dozen oysters).

In June 1969, oyster farming began on an experimental basis at Ralphs Bay on South Arm, using spat from the Tamar. About 10,000 dozen oysters became available for market in the second half of 1970, while the 1971 crop could be as high as 75,000 dozen.

A further oyster farm is being established at Dunalley, while adult oysters from the Tamar have been placed at Dunalley, Little Swanport and Norfolk Bay in an endeavour to establish further breed stocks. Leases for commercial oyster farming are being taken out for a number of other areas of the State.

Abalone (*Notobaliothis ruber*-845; *Schismotis laevigata*-846)

Abalone fishing, based mainly on the black lip (or red ear) abalone, *Notobaliothis ruber*, began in 1964 and has assumed a most important role in the Tasmanian fishing industry. The abalone, a marine snail, is found on rocks from just below low water mark to a depth of 100 feet. The shell of the black lip abalone is orange-red and in the form of a low spiral with ridges radiating from the spine; a row of holed protuberances extend from the growing margin of the shell to the spine. Shell diameters exceeding seven inches are known. Of less importance is the green lip abalone, *Schismotis laevigata*, which has a deeper, white, smooth shell and occurs in the far north of the State. Main abalone fishing grounds extend from South West Cape to Maria Island. Catches are also made along the east and west coasts where dense concentrations have been found. However, inclement weather and large seas restrict exploitations in the latter areas.

Skin divers, who normally operate from a boat, collect abalone by prising them from rocks using curved iron or aluminium bars. The abalone are brought ashore for cleaning where the 'foot' muscle and mantle are separated from the shell. Cleaning is normally performed at the processing factory where abalone are canned or frozen. Most of the finished product is exported overseas to the U.S.A. and Asia.

FISHERIES STATISTICS

Source of Data and Method of Presentation

Statistics presented in this section have been supplied, in the main by the Sea Fisheries Division of the State Department of Agriculture. In the preparation of fisheries production statistics, the quantities are generally in terms of the form in which the catch is taken from the water. For example, the statistics of fish production are in terms of 'estimated live weight' which is calculated from landed weights by using conversion factors for the various species. These conversion factors allow for the fact that the quantities of fish reported are frequently in a gutted, headed and gutted, or otherwise-reduced condition. Crustaceans are reported on a 'whole weight' basis and molluscs (edible) on a 'gross (in-shell) weight' basis.

The actual edible yield varies, depending on types of fish, and methods of preparation. Barracouta yield about 51 per cent of liveweight when filleted, and shark about 60 per cent when headed and gutted. The edible flesh in molluscs represents only a small portion of the in-shell weight. The conversion factor for scallops is one-fifth, and for abalone one-third, e.g. 300 lb of abalone in-shell yield approximately 100 lb of flesh.

The catch is generally defined as that landed in Tasmanian ports, regardless of whether it is caught in Tasmanian waters or not, or whether it is caught by Tasmanian fishermen or not. A quantity of shark and Southern Rock Lobster taken by Victorian-based fishermen in Tasmanian waters, but landed in Victoria, is included in the Victorian catch and excluded from Tasmanian figures, on the basis that the catch influences the Victorian rather than the Tasmanian economy.

Details of production refer only to recorded commercial production. In view of the importance of amateur fishermen in certain types of fishing, details shown cannot be taken as representing the whole catch. In addition, it is likely that the figures shown understate, to some extent, the full commercial catch since no information is available on fish taken for sale by persons not licensed as professional fishermen.

Persons Engaged in Fisheries

In the following table, which gives details collected in the Censuses of 1961 and 1966 (at 30 June), the numbers of persons whose industry was classified to 'fishing and whaling' are shown together with the numbers engaged in all primary industries and in the total work force; Australian and Tasmanian figures are compared:

Australia and Tasmania—Persons Engaged in Fisheries
Population Censuses, 1961 and 1966

Particulars	Australia		Tasmania	
	1961	1966	1961	1966
Persons engaged in—				
Fishing and whaling '000	8.3	8.0	0.6	0.6
All primary industries '000	513.3	456.7	20.8	17.2
Total work force '000	4,225.1	4,856.4	130.9	147.3
Persons engaged in fishing and whaling as a proportion of—				
All primary industries per cent	1.6	1.8	2.8	3.4
Total work force per cent	0.2	0.2	0.4	0.4

Employment, Boats

Persons Engaged and Boats

The following table shows details of persons and boats employed in the taking of fish, crustaceans and edible molluscs. The data are derived from boat registration records of the State Sea Fisheries Division. The term 'number of crew' refers to the usual number of crew on registered fishing vessels and lacks the precision of the concept 'average number employed' used in statistics of other production sectors. Many of the fishermen operate part-time only, and may normally follow other occupations:

Fisheries—Number and Value of Boats, Number of Crew, etc.

Length of Boat (feet)	1967			1968		
	Boats		Crew	Boats		Crew
	Number	Value	Number	Number	Value	Number
		\$'000			\$'000	
Under 20	95	115	152	99	131	174
20 and under 30 ..	147	413	204	119	383	173
30 and under 40 ..	141	952	267	140	1,032	261
40 and under 50 ..	130	1,818	284	131	1,886	304
50 and under 60 ..	58	1,340	162	63	1,531	193
60 and under 70 ..	8	255	28	7	217	24
70 and under 85 ..	3	220	10	4	188	16
85 and over ..	3	94	11	3	110	15
Total	585	5,207	1,118	566	5,478	1,160

The boats used for the estuarine fisheries are mostly small vessels, propelled by diesel or petrol motors of low power. The offshore vessels range in length from 30 feet to 100 feet and almost invariably are powered by diesel

engines. Refrigeration of the catch at sea is becoming more common, the four main types being ice box, ice cooling, brine tanks and dry refrigeration; almost all boats have wells or deck tanks which serve to keep the catch alive, e.g. crayfish or abalone.

The next table indicates the high proportion of relatively new boats now operating in the fishing industry and analyses the 566 boats according to age:

Number of Boats Classified According to Length and Age, 1968

Length of Boat (feet)	When Constructed						
	Before 1930	1930 to 1939	1940 to 1949	1950 to 1954	1955 to 1959	1960 to 1964	1965 to 1968
Under 20	1	2	10	12	6	12	56
20 and under 30	5	7	31	23	20	19	14
30 and under 40	14	18	23	14	22	30	19
40 and under 50	20	6	24	9	13	18	41
50 and under 60	4	4	15	2	8	12	18
60 and under 70	1	1	1	..	1	1	2
70 and under 85	3	..	..	..	..	1	..
85 and over	2	..	1	..	..	..	..
Total	50	38	105	60	70	93	150

Production

Fish Catch

The following table shows the production of the main types of fish caught in Tasmania for a five-year period. The fish types appear in the table without any further description to identify the particular species but a specification of the commoner types appears as an introduction to this section.

Fish—Production by Type
(’000 lb Estimated Live Weight) (a)

Type	1964-65	1965-66	1966-67	1967-68	1968-69
Mullet	152	34	32	20	48
Tuna	52	67	32	r 77	43
Shark	659	1,088	1,003	r 1,510	2,088
Australian Salmon	501	432	942	r 757	383
Flathead	69	74	119	101	64
Barracouta	2,018	3,003	2,286	r 3,581	3,089
Whitebait	41	71	95	56	82
Cod	18	20	15	10	12
Flounder	14	28	29	29	41
Trevally	24	21	9	8	14
Trumpeter	29	34	52	r 33	39
Garfish	44	46	13	r 26	28
Other	15	73	199	301	178
Total	3,637	4,989	4,826	r 6,509	6,108

(a) Estimated live weights are calculated from landed weights by conversion factors since quantities of fish are reported frequently in a gutted, headed and gutted, or otherwise reduced condition (e.g. barracouta and shark).

Crustaceans and Molluscs

In terms of value, the most important item in the Tasmanian catch is rock lobster and the next table shows details of production of this crustacean and also of molluscs:

Crustaceans and Molluscs—Production by Type

Type	1964-65	1965-66	1966-67	1967-68	1968-69
CRUSTACEANS ('000 lb Whole Weight)					
Rock Lobster ..	3,336	3,939	4,290	r 3,862	3,747
MOLLUSCS ('000 lb In-shell Weight)					
Oysters .. ..	..	..	..	n.p.	39
Scallops	2,916	868	753	496	276
Abalone	496	1,600	4,407	6,142	4,648
Total	3,412	2,468	5,160	n.p.	4,963

Comparison with other States

Rock Lobster: In 1968-69, Tasmania ranked third as a producer of rock lobster, the two leading States being W.A. with 62 per cent of the Australian total and S.A. with 17 per cent; the Tasmanian catch was 13 per cent of the total.

Abalone: The comparatively new Tasmanian abalone fishery in 1968-69 accounted for almost 32 per cent of Australian production of 14,614,000 lb (in the shell) of abalone. Victoria and South Australia ranked first and third with 41 per cent and 24 per cent respectively.

Scallops: For many years, Tasmania was the only State of the Commonwealth with a commercial scallop fishery; in 1955-56 Tasmania was joined by Queensland, but continued to retain its dominant position in the industry. In 1963, however, Tasmanian fishermen started a Victorian fishery in beds known to exist in Port Phillip Bay and the new site, in its first year (1963-64), produced more than twice the quantity of the Tasmanian fishery.

Tasmanian production in 1968-69 was just over two per cent of the Australian total, the Victorian proportion being 90 per cent. Subsequently the Victorian industry was expanded with the discovery of a considerable bed off Lakes Entrance. To prevent spoliation the Victorian government gazetted regulations to control dredging in Port Phillip Bay and at Lakes Entrance.

Catch Landed at Fishing Ports*Distribution of Fish Landed*

The table that follows shows the proportion of fish and rock lobster landed at Tasmanian fishing ports. The information relates to port of landing only, and not to the area in which the catch was made.

**Proportion of Total Fish and Rock Lobster Landed at Each Port, 1968-69
(Per Cent)**

Port	Fish	Rock Lobster	Port	Fish	Rock Lobster
Derwent & Channel			Bass Strait & Islands		
Dover	3.5	7.6	Bridport	5.6	3.7
Gordon .. ..	..	..	Currie .. ..	..	3.4
Hobart	6.3	8.4	Lady Barron ..	2.6	9.4
Kettering ..	21.4	3.9	Port Sorell ..	5.1	0.7
Margate	8.3	7.7	Smithton .. ..	..	1.5
Southport ..	0.2	1.7	Stanley	6.7	10.5
Woodbridge ..	0.5	..	'Tamar' (a) ..	3.2	0.1
			Wynyard	0.9	0.1
Total	40.2	29.3	Total	24.1	29.4
East Coast & Peninsula—					
Bicheno	4.4	4.1	West Coast—		
Coles Bay ..	1.8	0.2			
St Helens ..	1.2	10.2	Strahan	2.6	12.9
Triabunna ..	9.8	6.1			
Dunalley ..	4.7	5.2			
Port Arthur ..	11.2	2.6			
Total	33.1	28.4	Total Tasmania ..	100.0	100.0

(a) Launceston, Beauty Point and other Tamar ports.

The next table shows the proportion of the total rock lobster catch landed each month:

**Proportion of Rock Lobster Landed in Each Month
(Per Cent)**

Month	1968	1969	Month	1968	1969
January	17.7	19.0	July	6.2	4.6
February	12.4	17.8	August	2.9	3.4
March	15.8	12.7	September (a) ..	0.4	0.5
April	2.8	4.5	October (a)	0.2	0.4
May	1.5	2.4	November	13.0	17.5
June	3.4	4.8	December	23.7	12.4

(a) Closed season in most waters during these months.

Value of Production—Fishing

The table that follows gives details of gross and local values of edible fisheries products. The following definitions apply:

Gross Value of Production is the value placed on recorded production at the wholesale price realised at the principal markets.

Local Value (i.e. recorded production valued at the place of production) is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

Fisheries—Gross and Local Value of Production
(\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68 <i>r</i>	1968-69
Gross Value of Production—					
Fish (a)	353	491	(b) <i>r</i> 514	610	676
Crustaceans (Rock Lobster)	2,105	2,557	<i>r</i> 2,426	2,776	3,474
Molluscs	229	252	714	(b) 1,087	714
Total	2,686	3,300	<i>r</i> 3,653	4,473	4,864
Less Marketing Costs	492	552	<i>r</i> 630	805	764
Local Value of Production ..	2,194	2,747	3,024	3,668	4,100

(a) Includes value of seaweed harvested for production of alginate.

(b) Value of oysters from the Tamar oyster farm included as from 1966-67.

In other production sectors, local value is further reduced by deducting the value of materials used to arrive at the net value of production. For the fishing sector, this is not possible since data on materials used in the course of production are not available. (Petrol and diesel fuel are examples of such materials.)

Marketing

In general terms, it can be said that production of fish, crustaceans and molluscs from the Tasmanian fisheries far exceeds the demand generated by the State's relatively small population; it follows, therefore, that the industry is largely dependent on its ability to find export markets, both interstate and overseas, and this raises the problem of preserving a perishable product. In the past, shark and snoek (barracouta) when caught in large quantities, were sold to orchardists as manure simply because there was no other way of disposing of the surplus. The lifting of an export ban on frozen snoek (barracouta) is expected to result in a substantial amount being sold to Japan. Cold storage facilities are now generally available and in addition, canneries offer an alternative method of preservation, the principal cannery being located at Margate in the south. The problem of preservation has three aspects: (i) at sea; (ii) on shore; and (iii) in transit to market. Of the 566 registered fishing boats in 1968, 128 boats (i.e. 23 per cent) had refrigeration plant of various kinds. In addition, some catches, e.g. southern rock lobster, can be kept alive in boats' wells. Cold storage facilities ashore serve to hold the catch before its despatch to interstate and overseas markets while actual exports are carried by air, by refrigerated trailer on the roll-on roll-off ferries and in the refrigeration chambers of conventional ships.

Marketing is usually undertaken through fish processors and canners. Exporters and fishermen selling directly to consumers contribute a lesser proportion of the total than by the former method.

The following table shows the value of exports and imports of fishery products. The fact that Tasmania has an exportable surplus, yet nevertheless imports some fishery products, is chiefly due to differences in type; the imported varieties include canned sardines, anchovies, oysters, crabs, etc., together with frozen, salted or smoked varieties of European, New Zealand or South African origin. Tasmania has nine fish processors registered as exporters.

**Fishery Products—Value of Exports and Imports
(\$'000)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
EXPORTS					
Fish (a)—Overseas	17	..	1	5	4
Interstate	233	408	486	491	559
Rock Lobster—Overseas	693	922	584	571	974
Interstate	597	1,235	1,103	922	1,191
Molluscs—Overseas	159	101	214	588	594
Interstate	22	21	128	130	190
All Types—Overseas	869	1,023	799	1,164	1,572
Interstate	852	1,664	1,717	1,544	1,940
Total	1,721	2,687	2,516	2,708	3,512
IMPORTS					
Fish—					
Fresh and Frozen—Overseas	147	196	176	136	174
Interstate	56	68	84	105	114
Preserved in Tins—Overseas	101	164	110	138	115
Interstate	209	308	364	242	50
Other (b)—Overseas	7	32	1	6	12
Interstate	11	6	11	7	8
All Types—Overseas	255	392	287	280	301
Interstate	276	382	459	354	172
Total	531	774	746	634	473

(a) Includes fresh and frozen fish and fish preserved in tins.

(b) Includes smoked, salted and potted fish, extracts and caviare.

**Sea Fisheries Division
(Department of Agriculture)**

Administration

The Division of Sea Fisheries comes under the responsibility of the Minister for Housing and Fisheries, although for the purposes of administration the Division is under the control of the Director of Agriculture.

Under the *Fisheries Act* 1959, provision is made for a Sea Fisheries Advisory Board to advise the Minister on fisheries except in respect of salmon-trout, eels and whitebait which come under the control of the Inland Fisheries Commission. The Board consists of nine members appointed by the Governor as follows: the Director of Agriculture (or his representative); the Commissioner of Police (or his representative); a representative of Societies interested in the science of Zoology; two representatives of processors; and four representatives of professional fishermen. Matters discussed by the Board during 1969-70 included lobster sizes, problems of the scallop industry, abalone fishing, foreign fishing vessels, finance for fishermen and divers' equipment.

Fisheries Control

Patrol and inspection duties are continually carried out by Division officers throughout the State. As well as Tasmanian fisheries, certain Commonwealth waters and the Tasmanian section of the continental shelf are patrolled,

in addition to the enforcement of the provisions of the Australia-Japan Fishing Agreement. For these purposes, the Division owns five high-powered patrol vessels and two four-wheel drive vehicles. In 1969-70, 73 offences were reported of which 55 cases went before the courts, resulting in total fines of \$3,909.

Regular inspections are made of the freezer holds of Japanese fishing vessels for the purpose of noting such details as fish species, size of catch, equipment, etc.

Research Programme

There are two basic aims associated with the research work undertaken by the Sea Fisheries Division: (i) to increase the efficiency of the Tasmanian fishing industry; (ii) to develop adequate conservation measures that will ensure survival of the various species of fish, molluscs and crustaceans caught. The following gives details of recent research programmes undertaken by the officers of the Division.

Abalone: A tagging programme at Maria Island has been completed and tags are still being retrieved. It is hoped to make accurate estimates of abalone growth and mortality rates. Preliminary results indicate that the abalone is largely sedentary, movement being restricted to a few yards. It has also been shown that when abalone are subjected to more exposed conditions, growth rates and maximum lengths are greater than those in more sheltered environments. Another research project at Maria Island has been undertaken to investigate effects of concentrated fishing of virgin abalone populations.

Southern Rock Lobsters: Research officers have been carrying out an investigation into the relationship between the length and depth of the rock lobster carapace (the body portion of the lobster other than the tail and antennae). An immediate application of this research will be to show what size lobster is able to pass through a given size escape hatch. Research into egg-carrying patterns is being undertaken with the assistance of commercial fishermen in the hope of determining whether there is a recognisable time pattern when female rock lobsters carry eggs in Tasmanian waters.

The moulting of rock lobsters has been studied and filmed in the Marine Laboratory, creating considerable interest both inside and outside the fishing industry.

Scallops: The scallop fisheries reached a record low ebb in 1969-70. Research cruises by the *F.R.V. Penghane* have revealed local concentrations of healthy adult commercial scallops capable of restocking areas of the East Coast and the D'Entrecasteaux Channel. Some evidence of recent spatfall on the East Coast has also been detected.

Doughboy scallops, on the decline in the channel in recent years, are now extremely rare in that area. The only juvenile scallops found in the Channel in 1970 were queen scallops which, although not abundant, were found uniformly throughout the area. Populations of commercial, queen and doughboy scallops have dominated alternately in the Channel this century and it is therefore possible that queen scallops are set for a revival.

Pelagic Fish: A sonar searching programme in an area stretching from Storm Bay to Schouten Island has continued. The aim of the programme is to determine the seasonal abundance of various fish species in different areas. Work has already indicated that during May and June, school fish are most abundant in Storm Bay near the Derwent Estuary and in Marion Bay. Large schools of mackerel with anchovy and barracouta have been sighted on several occasions.

Survey of State Fishing Potential

In 1969-70, a joint survey was undertaken by Australian and Japanese fishing interests to examine the potential of less-exploited fish varieties in Tasmanian waters, e.g. cuttlefish, octopus, crab, schnapper, hijack, tuna, jack mackerel and sea urchin. The survey vessel *Urania* was hired for the venture which extended right round the island. An officer of the Sea Fisheries Division was on board during the survey as an observer: valuable experience in new fishing methods was gained and a considerable amount of data gathered on fish resources. The survey indicated that extensive development of a number of species would need to be undertaken to make commercial fishing viable.

Another survey of Tasmania's fishing potential is being planned as a joint venture of Government and Australian fishing interests.

Research on Pollution

Activities in the field of pollution research have been concerned with effluent discharge points from proposed industrial plants. Studies were undertaken at Burnie (North-West Acid Pty Ltd) and Wesley Vale (A.P.P.M. Limited); a similar survey may also be undertaken at Triabunna (Tasmanian Pulp and Forest Holdings Ltd).

The F.R.V. Penghana

In 1968 a closed circuit underwater television system was installed in the Sea Fisheries Division's 45 foot vessel, the *F.R.V. Penghana*. When filming, the camera of the system can be towed on an underwater sledge or held by a diver. The sledge method of mounting the camera is only suitable where the sea bed is smooth and free from seaweed concentrations.

A new 69-foot research and patrol boat will be commissioned in 1970-71 to supplement the work of the *Penghana*. It will be used mainly for investigational fishing and law enforcement in Bass Strait and on the West Coast.

Taroona Marine Laboratory

Completed in November 1969 at Crayfish Point, Taroona, this laboratory is the third such marine research establishment to be constructed in Australia; the West Australian Department of Fisheries and Fauna has a marine research centre at Waterman, near Fremantle and the C.S.I.R.O. controls a marine laboratory at Sydney. The main building of the Taroona complex houses an aquarium room, two research laboratories, a library-conference room, offices, store rooms, a workshop and garage. In 1970, a 15-foot aluminium runabout was acquired, enabling local field trips to be undertaken independent of the *F.R.V. Penghana's* research cruises.

Aquarium Room: This is the central feature of the research complex and provides the marine biologist with the opportunity to study live animals. The aquarium room contains a number of moveable fibreglass tanks; water salinity and temperature can be controlled for each individual tank. Most tanks are three feet by two feet and eighteen inches deep; the absence of large fixed tanks permits a maximum flexibility and tanks can be arranged to suit the purposes of each experiment. By the time of the official opening of the new laboratory in February 1970, scallop and rock lobster research had already commenced.

Water Supply: The intake for the pumping system is situated about 1,000 feet off-shore in almost 40 feet of water. This allows the intake pipe to be positioned at a depth that avoids the low salinity surface layer which contains most pollutants and also minimises the intake of mud and sand. Water is

pumped to header tanks and then gravity fed to the aquarium tanks. Because non-ferrous metals are highly toxic and iron has a low resistance to corrosion all pipes and fittings are made of glass, rubber or plastic. A short jetty of 120 feet, constructed in May 1970, conveys the intake pipes above the turbulent shore zone.

Future Experiments: Studies of shellfish reproductive cycles and larval and juvenile development are planned for 1970-71.

VALUE OF PRODUCTION

PRIMARY AND SECONDARY INDUSTRIES

Introduction

The value of production for Tasmania and the other Australian States is computed in accordance with the decisions reached at the Conferences of Australian Statisticians, and principally at the Conference held in 1935. The values shown in the tables that follow refer only to the production of primary industries and factories and exclude the building and construction industry, those industrial establishments not classified as factories, and certain agricultural and farmyard operations on areas of less than one acre.

Primary Industries

The following primary industries are those for which data are separately compiled in the value of production tables:

Primary, Rural

Agriculture
Pastoral
Dairying
Poultry
Bee-farming

Primary, Non-Rural

Trapping
Forestry
Fishing
Mining and Quarrying

In respect of these primary industries, the following uniform definitions are employed:

- (i) *Gross Value of Production* is the value placed on recorded production at the wholesale prices realised at the principal markets. In cases where primary products are consumed at the place of production, or where they become raw material for a secondary industry, these points of consumption are presumed to be the principal markets. Subsidies and bounties paid by the State and Commonwealth Governments to primary industries are, in general, included in gross value of production.
- (ii) *Local Value* (i.e. recorded production valued at the place of production) is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission and other charges incidental thereto.
- (iii) *Net Value of Production* represents local values less value of materials used in the process of production. Materials used in the process of production include seed, power, petrol and oils, feed consumed by farm stock, manures, dips, sprays and other costs of a similar nature. No deductions from local values have been made for depreciation, certain maintenance charges, interest, or some other costs normally incurred.

Secondary Industries (Factories)

To place a value upon the production of factories, the following definitions are employed:

- (i) *Value of Output* is the value of goods manufactured and includes the amount received for repair work, work done on commission, etc. The basis is the selling value *at the factory*, exclusive of all delivery charges.
- (ii) *Value of Production* is the value of output *less* the value (at the factory) of the materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges), insurance, pay-roll tax, income tax, advertising, interest on borrowed money, bad debts and other sundry charges.

In examining values for primary and secondary production, it will be seen that *gross value of production* is a concept confined to primary industries; that *local value* for primary industries is broadly analogous in concept with *value of output* for factories; that *net value of production* for primary industries is comparable with *value of production* for factories, since both are derived by deducting the value of materials used in the process of production, a procedure which eliminates possible duplication of values.

Comparing or Combining Industries

In comparing or combining production values for any of the previous industries, it is logically necessary to use only *net value of production* (primary) and *value of production* (secondary); both *gross* and *local* values will be found unsatisfactory because some degree of duplication will be involved. An obvious example of duplication can occur when the raw material for a factory process is the final product of a farm (e.g. the value of hops is contained in the *gross value of agriculture* and also in the *value of output of factories*, specifically of breweries). The primary-secondary relationship not only involves primary products becoming raw materials for factories but also factory products, (e.g. fertilisers) becoming essential materials for primary industries. Less obvious, perhaps, is the fact that one rural industry may supply the 'raw material' for another rural industry (e.g. hay from *agriculture* consumed by livestock in the *pastoral* and *dairying* industries).

In the following chapter, *gross* and *local* values are shown for the various primary industries; the basic reason for publication is not to facilitate comparison and combination of these values for individual industries, or groups of industries, but rather to show how *net value of production* is computed.

In accordance with the previous definitions, net value of production for primary industries is computed by deducting the cost of materials used in the process of production from the local value. Details of such costs are not available for: (i) bee-farming; (ii) trapping; (iii) forestry; and (iv) fishing. In the case of these industries, only local value can be computed.

Sources of Information—Value of Production

Primary Production, Rural

The data used are those concerning quantity of primary production (supplied principally by farmers, etc.) together with information collected from various sources on prices realised in the principal markets for different products, the costs of marketing these products and the costs of certain materials used in their production. Price and cost data are obtained from statutory

authorities, (e.g. Dairy Produce Equalisation Committee), market reports, special returns collected from wholesalers, brokers, auctioneers, etc., and from overseas and interstate trade statistics.

Primary Production, Non-Rural

(i) *Trapping*—Principal data are derived from export of skins and information on the annual mutton bird catch.

(ii) *Forestry*—Principal value data are available from the annual factory census, since forestry products are the basic raw material for sawmills, newsprint and paper mills, etc.

(iii) *Fishing*—Quantity data are supplied by fishermen and prices are collected from fish wholesalers and agents.

(iv) *Mining and Quarrying*—Principal value data are supplied by mine operators in the annual mining census.

Secondary Production

Factories—Both quantity and value data are supplied by factories in the annual factory census. Further details will be found in Chapter 8, 'Secondary Industry—Manufacturing'.

Period Covered

Secondary: Year ended 30 June.

Primary, Rural: Generally the year ended 30 June but includes current season's production harvested after the 30 June, e.g. potatoes.

Primary, Non-Rural: Mining and quarrying year ended 31 December; other industries year ended 30 June.

GROSS VALUE OF PRODUCTION

Rural Industries

Rural industries, for value of production purposes, comprise: (i) agriculture; (ii) pastoral; (iii) dairying; (iv) poultry; and (v) bee-farming. These industries have no relation, however, to any classification of individual rural holdings on an industry basis; a single holding would, in fact, usually produce several products, some attributable to one and some to another such industry (e.g. wheat and oats which would be counted in agriculture, wool in pastoral and milk in dairying). The industries represent merely a convenient grouping of the aggregate production of individual products.

Agriculture

The importance, in terms of gross value, of two crops, hay and turnips (swede and white) which jointly account for approximately 27 per cent of the total gross value of agriculture emphasises the significance of livestock to the rural industries.

The following table shows quantity and value details for the main items comprising the agricultural industry. Also included in the table is the average value per unit.

Gross Value of Production—Agriculture, 1968-69

Crop	Unit of Quantity	Production	Gross Value	
			Per Unit	Total
Cereals for Grain—			\$	\$'000
Barley	bushels	884,067	1.29	1,142
Oats	bushels	582,910	0.87	505
Wheat	bushels	410,263	1.14	467
Total Cereals for Grain .. ..	..	..	..	(a) 2,115
Hay	tons	494,227	15.88	7,850
Green Feed .. .. .	..	..	..	1,663
Field Peas—				
Blue	bushels	79,359	2.61	207
Grey and Other	bushels	49,482	2.87	142
Total Field Peas .. .. .	..	128,841	2.71	349
Vegetables for Stock Feed—				
Horse Beans	bushels	4,626	3.76	17
Turnips (Swede and White) .. ..	..	n.a.	n.a.	4,315
Total Vegetables for Stock Feed	..	..	..	(a) 4,342
Grass Seed—				
Clover	cwt	473	43.65	21
Other	cwt	14,130	15.94	225
Total Grass Seed	cwt	14,604	16.84	246
Industrial Crops—				
Hops (Dry Weight)	'000 lb	3,488	0.77	2,673
Mustard	'000 lb	133,228	0.11	15
Total Industrial Crops .. ..	..	..	..	2,688
Vegetables for Human Consumption—				
Beans, French and Runner	'000 lb	13,769	53.71	739
Peas, Green (Ex-Shell)	'000 lb	54,401	50.41	2,742
Potatoes	tons	72,120	29.38	2,119
Turnips	tons	4,345	93.15	405
Total Vegetables for Human Consumption .. .. .	..	..	..	(a) 8,128
Orchard Fruit—				
Apples	bushels	7,138,000	2.03	(b) 14,455
Apricots	bushels	29,000	3.44	100
Pears	bushels	451,000	2.54	(b) 1,144
Total Orchard Fruit .. .. .	..	..	..	(a) 15,751
Small Fruit—				
Currants	'000 lb	2,638	134.50	355
Loganberries	'000 lb	628	133.79	84
Raspberries	'000 lb	2,629	148.12	389
Total Small Fruit .. .. .	..	..	..	(a) 912
All Other Crops .. .. .	..	..	..	555
Total Crops .. .. .	..	..	..	44,599

(a) Includes other crops not specified in table.

(b) Includes Government devaluation subsidy paid to exporters of apples (\$1,104,000) and pears (\$92,000).

Average Unit Gross Values

In the next table, average unit gross values for the principal crops are shown for a five-year period. The unit values have been calculated for the principal agricultural products by dividing the total quantity produced into the total gross value of production for each unit. They therefore represent weighted average 'prices' of the product in all markets (including the farm itself where quantities are retained for farm use) and indicate trends rather than prices actually paid to farmers.

Average Unit Gross Value of Principal Crops

(\$)

Crop	Unit of Quantity	1964-65	1965-66	1966-67	1967-68	1968-69
Cereals for Grain—						
Barley	bush	1.39	1.31	1.44	1.49	1.29
Oats	bush	0.92	0.82	0.88	1.00	0.87
Rye	bush	2.21	2.04	1.60	1.60	1.50
Wheat	bush	1.33	1.38	1.43	1.46	1.14
Hay	ton	12.77	15.52	16.35	20.68	15.88
Field Peas—						
Blue	bush	3.19	2.59	2.96	2.58	2.61
Grey and Other	bush	3.06	2.54	2.16	3.14	2.87
Vegetables for Stock Fodder—						
Horse Beans	bush	4.01	3.90	3.14	3.20	3.76
Grass Seed—						
Clover	cwt	62.92	45.22	39.87	46.29	43.65
Other	cwt	20.30	15.29	10.97	18.83	15.94
Total Grass Seed	cwt	24.13	17.84	12.53	20.89	16.84
Industrial Crops—						
Hops (dry weight)	lb	0.68	0.71	0.75	0.77	0.77
Mustard	lb	0.11	0.14	0.10	0.11	0.11
Vegetables for Human Consumption—						
Beans, French and Runner	'000 lb	70.06	69.95	70.94	69.72	53.71
Peas, Green (a)	'000 lb	46.77	43.75	48.91	53.14	50.41
Potatoes	ton	117.97	37.39	54.56	48.30	29.38
Turnips	ton	62.80	76.41	85.57	85.66	93.15
Orchard Fruit—						
Apples	bush	2.16	1.91	2.37	2.10	2.03
Apricots	bush	2.04	2.83	3.60	3.23	3.44
Cherries	bush	6.75	5.77	6.51	7.33	6.92
Nectarines	bush	4.97	3.57	5.78	4.60	5.22
Peaches	bush	2.70	2.39	4.38	5.03	5.25
Pears	bush	2.64	1.38	2.42	2.08	2.54
Plums and Prunes	bush	2.01	1.49	1.62	1.49	1.79
Quinces	bush	0.96	1.20	1.20	0.90	1.06
Small Fruit—						
Blackberries	lb	0.09	0.09	0.09	0.12	0.12
Currants	lb	0.10	0.09	0.11	0.13	0.13
Gooseberries	lb	0.04	0.04	0.05	0.06	0.06
Loganberries	lb	0.08	0.08	0.10	0.13	0.13
Raspberries	lb	0.10	0.10	0.11	0.14	0.15
Strawberries	lb	0.19	0.19	0.18	0.23	0.23

(a) Ex-shell.

Pastoral, Dairying, Poultry and Bee-farming

For value of production purposes, the pastoral industry is taken to comprise the three products—wool (including wool on skins), cattle (other than culled dairy cows and bobby calves) slaughtered, and sheep and lambs slaughtered. ('Bobby' calves are calves sold as soon as practicable after birth.) Dairying is taken to comprise the three products—milk, dairy cattle (culled cows and bobby calves) slaughtered, and pigs slaughtered. Poultry comprises poultry slaughtered and eggs, and bee-farming consists of honey and bees-wax produced.

The prime source of data on livestock slaughtered is information supplied by slaughtering establishments, supplemented by farmers' annual census returns giving details of slaughtering on farms. As sufficiently detailed information is not available on the types of cattle slaughtered to enable a precise dissection of total slaughterings to be made between the pastoral and dairying industries, data on the known culling rate in dairy herds are also used for this purpose.

The table that follows gives details of the gross value of production for each of the products of these industries:

Gross Value of Production—Pastoral, Dairying, Poultry and Bee-farming
(£'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Pastoral—					
Shorn Wool (including Crutchings)	17,411	20,399	19,383	14,498	19,713
Other Wool (a)	1,639	2,006	1,590	1,111	1,467
Sheep and Lambs Slaughtered (b) (c)	5,640	6,382	6,418	5,396	5,852
Cattle Slaughtered (b) (d)	8,542	8,563	10,139	9,816	12,086
Total	33,233	37,350	37,540	30,821	39,117
Dairying—					
Milk	19,416	19,100	19,956	19,828	21,473
Cattle Slaughtered (d)	1,662	1,854	1,977	2,017	1,917
Pigs Slaughtered (b)	4,156	4,490	4,833	5,018	4,324
Total	25,234	25,445	26,766	26,862	27,713
Poultry—					
Eggs	3,518	3,724	4,270	4,229	4,854
Poultry Slaughtered	692	690	814	914	1,040
Total	4,210	4,414	5,083	5,143	5,894
Bee-farming—					
Honey	122	86	50	118	97
Beeswax	9	7	3	5	5
Total	131	92	53	123	102

(a) Dead, fellmongered and wool exported on skins.

(b) Includes adjustment for net exports of livestock.

(c) Excluding value of wool on skins.

(d) Culled dairy cows and bobby calves slaughtered are allocated to dairying; all other cattle slaughtered to pastoral.

The next table shows the average unit gross value of livestock (other than calves) slaughtered:

Average Unit Gross Value of Livestock Slaughtered
(\$)

Livestock	1964-65	1965-66	1966-67	1967-68	1968-69
Cattle (other than Calves) ..	78.02	88.86	91.51	87.84	90.32
Sheep	5.95	5.73	5.40	3.57	3.52
Lambs	7.80	7.92	7.39	7.16	5.75
Pigs	30.60	30.41	32.11	34.77	30.70

Primary Industries

The following table brings together gross values of production for all primary industries for a five-year period:

Gross Value of Production—Primary Industries
(\$ million)

Industry	1964-65	1965-66	1966-67	1967-68	1968-69
Agriculture	40.9	40.5	44.9	47.3	44.6
Pastoral	33.2	37.4	37.5	30.8	39.1
Dairying	25.2	25.4	26.8	26.9	27.7
Poultry	4.2	4.4	5.1	5.1	5.9
Bee-farming	0.1	0.1	0.1	0.1	0.1
Total Rural.. .. .	103.7	107.8	114.4	110.3	117.4
Trapping.. .. .	0.4	0.4	0.5	0.5	0.4
Forestry	15.3	16.0	16.6	17.2	15.9
Fishing	2.7	3.3	3.7	4.7	4.9
Mining and Quarrying ..	28.5	32.8	39.3	38.7	50.6
Total Non-Rural ..	46.9	52.5	60.1	61.1	71.7
Total Primary	150.6	160.3	174.5	171.4	189.2

NET VALUE OF PRODUCTION—ALL RECORDED INDUSTRIES

Definition

In the preliminary section dealing with definitions, it was emphasised that *gross values of production* are unsuitable for making comparisons or for combining individual industries or groups of industries. In fact, it is impossible to make a comparison between gross value of production for primary industries and for factories, since gross value of production is not collected for factories; the primary-secondary comparison (or combination) can only be made on the basis of *net value of production* (primary industries) and *value of production* (factories).

Net Value, 1968-69

The next table shows, in detail, the method whereby gross values (primary industries) are reduced to local values and then further reduced to net values; also, the reduction of value of output (factories) to value of

production is shown. It will be noted that the combination of primary and secondary industries is made only in respect of the final column, where the net value of production (primary) is added to the value of production (factories).

Value of Production—All Recorded Industries, 1968-69
(\$ million)

Industry	Gross Value of Production (Value at Principal Market)	Less Marketing Costs	Local Value, (i.e. Production Valued at Place of Production)	Less Cost of Materials, Fuel, etc. Used	Net Value of Production
PRIMARY INDUSTRIES					
Rural—					
Agriculture ..	44.6	10.1	34.4	6.5	27.9
Pastoral ..	39.1	2.9	36.2	17.6	18.7
Dairying ..	27.7	1.4	26.3	7.5	18.9
Poultry ..	5.9	0.1	5.8	2.4	3.4
Bee-farming (a) ..	0.1	..	0.1	n.a.	0.1
Total Rural ..	117.4	14.5	102.9	34.0	68.9
Non-Rural—					
Trapping (a) ..	0.4	..	0.3	n.a.	0.3
Forestry (a) ..	15.9	2.5	13.4	n.a.	13.4
Fishing (a) ..	4.9	0.8	4.1	n.a.	4.1
Mining & Quarrying ..	50.6	5.7	45.0	12.3	32.6
Total Non-Rural	71.7	8.9	62.8	12.3	50.5
Total Primary	189.1	23.4	165.7	46.3	119.4

SECONDARY INDUSTRIES (b)

Industry	Value of Output (at Factory Door)	Less Cost of Materials, Fuel, Used	Value of Production
Factories	445.1	247.1	198.0

ALL INDUSTRIES

Net Value of Production, Primary and Secondary Industries (c) 317.4

Note: Reference is made to value definitions in the introduction to this section.

(a) Gross and local values available, but production costs not available.

(b) Values are for 1967-68; 1968-69 data not available.

(c) See note (b).

Cost of Materials, Fuel, etc. Used

In the previous table, *local value* has been reduced to *net value of production* (primary) and *value of output* to *value of production* (factories); in each case, the process involved deduction of certain costs. Full details of factory costs appear in Chapter 8, 'Secondary Industry—Manufacturing'; the following table has been compiled to show details of those costs taken into account in primary industries.

*Value of Production***Primary Industries—Recorded Costs, 1968-69
(\$'000)**

Cost Item	Agriculture	Pastoral	Dairying	Poultry	Mining and Quarrying	Total
RURAL						
Seed	1,327	381	163	..	..	1,871
Fertilisers	1,738	3,222	1,381	..	..	6,340
Spraying, Sheep-Dip	1,324	144	35	..	..	1,503
Stock Feed ..	128	12,963	5,066	2,300	..	20,458
Water for Irrigation	182	64	64	..	..	309
Power, Fuel & Light	1,807	804	741	147	..	3,499
Total Rural ..	6,504	17,578	7,450	2,447	..	33,980
NON-RURAL						
Total (a) ..	..	..	..	..	12,340	12,340
RURAL AND NON-RURAL (b)						
Total Primary	6,504	17,578	7,450	2,447	12,340	46,320

(a) Comprises power, fuel and light (\$1,863,000) and cost of repairs, timber, explosives and other expendable stores used in mining and quarrying (\$10,477,000).

(b) Costs not available for bee-farming, trapping, forestry and fishing.

Net Value—Summary

The next table summarises, for a five-year period, the net value of production for all recorded industries.

**Net Value of Production—All Recorded Industries
(\$ million)**

Industry	1964-65	1965-66	1966-67	1967-68	1968-69
Primary, Rural—					
Agriculture	27.2	23.1	29.4	29.3	27.9
Pastoral	21.0	22.3	21.6	12.5	18.7
Dairying	19.0	18.0	19.2	18.2	18.9
Poultry	1.6	1.8	2.8	2.7	3.4
Bee-farming (a) ..	0.1	0.1	..	0.1	0.1
Total Rural	69.0	65.3	72.9	62.7	68.9
Primary, Non-Rural—					
Trapping (a)	0.4	0.3	0.5	0.4	0.3
Forestry (a)	13.3	13.8	14.3	14.8	13.4
Fishing (a)	2.2	2.7	3.0	3.8	4.1
Mining and Quarrying ..	18.2	20.3	25.8	25.2	32.6
Total Non-Rural ..	34.0	37.2	43.7	44.3	50.5
Total Primary ..	103.1	102.5	116.6	107.0	119.4
Secondary—					
Factories	167.3	175.6	194.6	198.0	..
Total Industries ..	270.3	278.1	311.1	305.0	..

(a) Local value of production.

The next table compares the net values of production of the primary and secondary industries and shows the emerging dominance of secondary industry.

Net Value of Production, Selected Years: Primary-Secondary Industry Comparison

Year	Primary		Secondary		Total Net Value
	Net Value	Proportion of Total	Net Value	Proportion of Total	
	\$'000	per cent	\$'000	per cent	\$'000
1950-51	66,947	57.6	49,229	42.4	116,176
1953-54	65,427	49.7	66,129	50.3	131,556
1956-57	79,181	44.9	97,365	55.1	176,546
1959-60	75,808	38.6	120,392	61.4	196,201
1962-63	79,506	35.9	142,033	64.1	221,539
1965-66	102,515	36.9	175,606	63.1	278,121
1966-67	116,573	37.5	194,571	62.5	311,144
1967-68	106,816	35.0	198,019	65.0	304,835

Tasmania and Australia Compared

Some indicator other than comparison with previous years is needed. Probably the most significant measure is the comparison between the net values of production for all recorded Tasmanian industries and those for Australia as a whole.

Net Value of Production: Tasmania and Australia

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
NET VALUE OF PRODUCTION—ALL RECORDED INDUSTRIES (\$ million)					
Tasmania	270.3	278.1	311.1	305.0	
Australia	r9,068.2	r9,324.7	r10,393.9	r10,549.5	

**TASMANIAN PROPORTION OF AUSTRALIAN TOTAL
(per cent)**

Primary, Rural—					
Agriculture	2.8	2.7	2.4	r 3.3	2.3
Pastoral	1.7	1.9	1.8	1.2	1.6
Dairying	5.3	r 5.1	5.2	r 4.9	5.0
Poultry	3.1	2.8	r 3.9	r 4.6	4.7
Bee-farming (a)	2.9	2.4	1.3	r 2.7	3.4
Total Rural	2.6	2.6	2.6	2.6	2.4
Primary, Non-Rural—					
Trapping (a)	3.1	2.5	r 4.0	r 4.2	3.2
Forestry (a)	r 12.4	r 12.5	r 13.2	r 13.4	12.0
Fishing (a)	5.7	6.6	r 6.8	r 6.8	7.0
Mining and Quarrying	r 4.5	4.6	5.0	r 4.4	4.7
Total Non-Rural	6.1	6.1	6.4	r 5.9	5.7
Total All Primary	3.2	3.3	3.3	3.4	3.2
Secondary—					
Factories	2.8	2.8	2.8	2.7	
Total Industries	3.0	3.0	3.0	r 2.9	

(a) Local value of production.

Tasmanian-Australian Comparison

Taking into account Tasmania's proportion of the Australian population (3.2 per cent), and examining the comparisons in the previous table, it is immediately apparent which are Tasmania's most important industries *on a national scale*. In order, they appear to be forestry, fishing, dairying, poultry and mining; again *on a national scale*, the non-rural group of primary industries appears to be more significant than the rural group.

Leaving aside the question of Tasmania's contribution to the Australian total, the State's most important activity in terms of net value of production is secondary industry (factories), followed by mining, agriculture, dairying, pastoral and forestry in that order.

Chapter 8

SECONDARY INDUSTRY—MANUFACTURING

FACTORIES

Historical

The evolution of Tasmanian farming is described in continuous annual statistics from 1818 but the early records relating to factories are extremely meagre. While the early colonial statisticians had immediately put on record such fundamental measures as acreages, crop yields and livestock numbers, they were content, in the matter of factories, to merely classify and count the number of establishments. Some concept of early manufacturing activity can be derived from the following table which has been adapted from the *Statistical Returns of Van Diemen's Land, 1824 to 1839*:

Comparative Account of Manufactories and Trades in Van Diemen's Land

Description of Establishment	Number of Establishments		Description of Establishment	Number of Establishments	
	1824	1838		1824	1838
Agricultural Implement Makers .. ..	..	9	Mills, Steam .. ..	..	3
Breweries	3	19	Mills, Water and Wind ..	5	51
Candle Makers .. ..	..	4	Potteries .. ..	..	1
Cooperages .. ..	..	9	Printing Offices	1	8
Coachmakers .. ..	..	2	Ropemakers	1	1
Distilleries	1	4	Sailmakers	1	5
Dyers .. ..	..	2	Sawmills	1	2
Engineers .. ..	..	7	Shipwrights .. ..	..	5
Fellmongers	2	4	Snuff Makers .. ..	..	1
Foundries .. ..	..	3	Soap Makers	1	1
Furriers .. ..	..	2	Tanners	6	15
Mast and Block Makers ..	..	1	Wool Staplers .. ..	..	3

The grinding of wheat for flour gave rise to the first demand for power, the original solution being water mills and windmills followed by use of the steam engine (the first steam mill commenced in 1831). Later records refer to 'mills, horse-driven', the beast being driven around a circular track. The relation between early factory activity and the farming and whaling economy in which it grew is indicated by the fact that, in the table, five of the descriptions (fellmongers, etc.) refer to processing of animal products, four (shipwrights, etc.) to the construction and maintenance of ships and two (breweries, etc.) to the making of alcoholic beverages for which there were nearly as many licensed outlets as exist today.

The *Account of Manufactories and Trades*, on a simple establishment basis similar to the last table, was published annually throughout the 19th century and is at least a guide to the introduction of new industries and new skills to the State.

The presentation of factory statistics, in the private sector, on a simple establishment basis failed to answer a number of questions such as the number of employees, the quantities produced, the value of output, the capital invested, etc., and this lack of information persisted until 1882 when the Government Statistician began publishing quantity, value and employment data for jam factories and breweries; the coverage of industries was then gradually expanded until, by 1911, publication had commenced of annual factory statistics showing most of the basic information sought in current collections.

Some indication of the transformation of Tasmania from an essentially rural economy is given in the following table in which the proportion of the work force engaged in manufacturing activities is compared in the period commencing 1911:

Employment in Tasmanian Factories Compared with Total Labour Force

Particulars	1911	1933	1947	1954	1961	(a) 1966
Labour Force (b)—						
Males ..	61,182	69,226	80,201	93,976	101,289	106,557
Females ..	13,343	16,861	20,117	24,232	29,628	40,765
Persons ..	74,525	86,087	100,318	118,208	130,917	147,322
Factory Employment (c)—						
Males ..	8,737	7,147	16,186	20,249	24,811	28,041
Females ..	1,561	2,086	3,751	4,340	5,347	6,274
Persons ..	10,298	9,233	19,937	24,589	30,158	34,315
Factory Employment as Percentage of Labour Force—						
Males ..	14.3	10.3	20.2	21.5	24.5	26.3
Females ..	11.7	12.4	18.6	17.9	18.0	15.4
Persons ..	13.8	10.7	19.9	20.8	23.0	23.3

(a) Labour force figures in 1966 not strictly comparable with those for previous years; see 'Employment' section of Chapter 10, 'Labour, Wages and Prices'.

(b) Source: censuses of population in years shown; includes employers and self-employed.

(c) Average number of persons engaged, including working proprietors, as reported in the annual Factory Census for 1911 and those for financial years ending in 1933, 1947, 1954, 1961 and 1966.

Electric Power and Industrialisation

In 1900, the Government Statistician published operational details of Tasmania's chief manufacturing industries; these read in part as follows (with specification of the number of 'hands' employed): Sawmills, 920; Jam Factories, 499; Boot Factories, 364; Brickyards and Potteries, 247; Woollen Mills, 177; Tanneries and Fellmongeries, 131; Flour Mills, 126; Breweries, 97; Butter Factories, 92; Fruit-drying sheds, 76; Soap and Candle Factories, 57; Bark Mills, 33; Bacon Factories, 18. At this point in time, virtually all power was generated by steam engine on the factory site, the alternative sources such as 'gas, oil and electricity' being very little used. A year later the establishment of the Commonwealth of Australia introduced free trade between the States and this deprived Tasmanian industries of the protection which they had previously enjoyed. The free importation of Australian manufactures, chiefly from Victoria, brought about a period of stagnation and inhibited the further development of manufacturing industry within the State; loss of population by migration to other parts of Australia in each decade up to World War II reflected the lack of employment opportunities which an expansion of manufacturing activity would have provided.

If no new factor had been introduced in the years after Federation, the probability is that Tasmania would have maintained a predominantly rural economy, diversified to a limited extent by sawmilling and mining. In these circumstances, employment opportunities would have been severely restricted and the more industrialised mainland States would have continued to rapidly drain off the island's population growth attributable to natural increase. The new factor that eventually transformed the State's economy was hydro-electric power but its possibilities could not be exploited without heavy capital expenditure and massive construction works, all of which required time. It is paradoxical, therefore, that the first major hydro-electric construction works were initiated in a period of stagnation immediately prior to World War I, and that the second major construction phase was pushed forward during the 1930s when the State's factory activity was at a very low ebb due to the general economic depression.

The key to the further industrialisation of Tasmania was its abundant supply of water at high level in the Central Plateau and the State's industrial revolution may be thought of as beginning in 1916 when the Waddamana turbines below the Great Lake began operating; from the initial 10,000 horsepower then developed, the hydro-electric system has expanded to today's capacity of over 1.25m kW. The availability of cheap electric power resulted in the establishment of new types of industry, some on a very large scale; examples are: electrolytic zinc production, 1917; carbide manufacture, 1918; cement manufacture, 1930; fine paper production, 1938; newsprint production, 1941; aluminium production, 1955; ferro-manganese production 1962. The introduction of pulp and paper manufacture is a special case to the extent that changes in technology made possible the use of native hardwoods for the first time; the production of a suitable pulp from eucalypts was pioneered in Tasmania before plants were established in other Australian States.

Given that electrical power is cheap and usually abundant, the question arises as to why the industrialisation of the State has not progressed further. The two obvious impediments to the rapid introduction of new enterprises are the small size of the local market and the costs of transportation to the principal markets in the other States. The weighing of these factors (i.e. cheaper power against possibly higher transportation costs) has naturally had the effect of attracting industries requiring large quantities of power. Such undertakings are not necessarily large employers of labour so it is possible that industrialisation, measured by capital investment and electrical power consumption, may have progressed more rapidly than industrialisation measured by involvement of the labour force in factory activities.

Without this advantage in electrical power, Tasmania would be largely restricted to an economy based on its own primary products—and even these, in many cases, would need to be processed in other Australian States. With it, Tasmania is not only capable of processing its own primary products but also of importing raw materials (e.g. the ores and concentrates used at Risdon and Bell Bay) for its own manufacturing industries.

INTEGRATED ECONOMIC CENSUSES, 1968-69

Previous Economic Censuses

Censuses by Sectors

Prior to 1968-69, the Bureau had for many years conducted censuses of economic activity in certain sectors of the economy. For example, the manufacturing industry statistics published in this chapter have been compiled from the regular annual factory censuses that were begun in the first decade

of this century. Statistics of mining collected by the Bureau were first put on a uniform basis in 1952 when regular annual censuses of mines were initiated. In the field of retail trade, censuses have been conducted at irregular intervals (years ended 30 June 1948, 1949, 1953, 1957 and 1962).

Each Sector in Isolation

A characteristic of these earlier censuses was that each tended to be *self-contained* and to be conducted *in isolation*. It is possible, however, to name many establishments which do not fit neatly into a single census sector. A good example is a manufacturing bakery which may be simultaneously a factory, a wholesaler and a retailer. Another good example is a service station with repair facilities; definitionally such an establishment was partly a factory (car repair being a factory activity) and partly a retailer. For the purpose of the earlier censuses, establishments such as these needed to dissect their accounts and operations to produce details relevant to the economic activity covered by a particular census (e.g. a service station would be included, for its sales, in a retail census; and for its repair work, in a factory census).

Censuses of Establishments

Another characteristic of earlier censuses was their concentration on *establishments* as the basic unit for reporting data. Of course, most business units in the community are still organised on a basis where no distinction need be made between the operations of the *enterprise* and the operations of the *establishment* (e.g. the corner grocery operated by a sole proprietor); in many cases, the accounts of the *enterprise* and the accounts of the *establishment* are one and the same thing.

However, there are also many cases of *multi-establishment enterprises* (ranging from the interstate chain-store company to the sawmiller operating mills at two different sites). A multi-establishment enterprise may have all its establishments operating in a single census sector (e.g. all retailing) or it may have establishments operating in a number of census sectors (e.g. manufacturing, wholesaling, retailing). In previous censuses, the existence of multi-establishment enterprises was ignored; and the basis of collection was forms addressed to individual establishments which happened to carry on the form of economic activity covered by the particular census. Interstate ownership was also ignored and each State Office of the Bureau collected returns for the establishments within its own State boundaries, despite the fact that the headquarters of the parent enterprise, in some cases, might be located in another State.

Classification of Data

Since each of these earlier censuses tended to be designed and conducted in isolation, the classification and aggregation of data were carried out to describe the special characteristics of the particular economic sector under scrutiny. For example, there was no *standard industrial classification* that could be applied to all businesses; instead, there was a particular classification evolved to suit each economic sector. There were also differences in the treatment of accounting data; for example, factories were required to report value of output (i.e. value at the factory door) whereas retailers were required to report actual sales.

List of Businesses

In general, the list of businesses on which any one census was based had no relationship with the lists used for other economic sectors because each subject matter branch of the Bureau endeavoured to build up and maintain

a comprehensive list of businesses operating in the particular census sector for which it was responsible. Naturally there could be overlap and the same business could be recorded on two or more lists, and asked to report on different aspects of its operations in different censuses.

The Integration Concept

The Simultaneous Approach

In the description of pre-1968-69 censuses, attention has been called to certain defects. Improvements could have been made one at a time but each would have affected the comparability of previous statistical series and therefore a piece-meal programme of change was rejected. Instead the decision was taken to make all changes simultaneously and to introduce new concepts in four simultaneous censuses covering the year 1968-69 (the general title was Integrated Economic Censuses, 1968-69).

The Meaning of 'Integrated'

The term 'integrated' was adopted to indicate a co-ordinated merging of a number of previously independent collections using common concepts, definitions and collection and tabulation procedures. A description of the procedures used for the Integrated Censuses, which will serve also to illustrate the major changes in approach, is summarised as follows:

(i) *List of Businesses*: Four census sectors (manufacturing, mining, wholesaling, and retailing) were included in the 1968-69 Integrated Economic Censuses. Instead of working from four separate and unrelated lists of businesses as in the past, the Bureau used a single *integrated* list (or register) in which all businesses were coded according to their major economic activity. The *integrated register* was compiled to show, in the case of multi-establishment enterprises, first the enterprise and then its individual establishments and the State in which each was located. The register was maintained and updated by computer which was used also for the addressing of forms to businesses in the four census sectors.

(ii) *Establishments and Enterprises*: In the 1968-69 operation, a multi-establishment enterprise received an enterprise form and a form for each of its establishments carrying on economic activity predominantly in one or more of the four census sectors. In other words, the business was being treated as an *integrated* organisation. In the case of single-establishment enterprises, only the one form was sent, the assumption being that the operations of the establishment would also be the operations of the enterprise.

A multi-establishment enterprise was required to complete its enterprise return in terms of the total accounts of the organisation; to then dissect this total to represent the part corresponding to the four census sectors (*in-scope*); and to indicate what part of its operations fell outside the four census sectors (*out-of-scope*). Individual establishment returns had then to be completed and reconciled with the part of the enterprise return relating to *in-scope* activities.

The principle followed was that each enterprise had the responsibility for completing its own establishment returns, irrespective of their State of location. As a result, the Victorian Office of the Bureau became the collector of returns for some Tasmanian establishments, when the parent enterprises happened to be located in Victoria; similarly the Tasmanian Office became the collector for some Victorian establishments when the parent enterprises were located in Tasmania (these are just examples of the principle of collecting returns direct from the parent enterprise). This collection procedure, however,

does not mean that establishment data will not be credited to the State of location. For obvious reasons, enterprise statistics will be available on an Australian basis only.

(iii) *Classification of Data*: Developed for use in the 1968-69 Integrated Economic Censuses was a list of economic activities, entitled the Australian Standard Industrial Classification. Based on four-figure coding, the Classification can be applied to any type of business, once its major type of economic activity is ascertained. Thus, the 1968-69 Censuses will result in the publication of data using an *integrated* classification.

The opportunity was taken to standardise financial reporting in the four census sectors (manufacturing, mining, wholesaling, retailing) and, as far as possible, to use the accounting concepts in conformity with usual business practice; for example, the old concept of value of output was eliminated from the manufacturing and mining sectors and, for 1968-69, all sectors were required to report sales. In other words, financial reporting was placed on an *integrated* basis.

Future Developments

Annual censuses, using the integration concepts, will continue in the manufacturing and mining sectors but censuses in the wholesale and retail sectors will be conducted only at five-yearly intervals. There are, of course, other sectors for which no census has yet been held, for example building and construction, and transport. Current planning is devoted to the project of a further major integrated census in 1973-74, the sectors involved being manufacturing, mining, wholesaling, retailing, and building and construction.

Publication of 1968-69 Results

In this chapter, manufacturing statistics appear for 1967-68 (identical with those appearing in the 1970 *Year Book*). It has not been possible to insert the results of the 1968-69 Integrated Economic Censuses (in particular the factory sector) due to the very formidable technical, processing and classification problems inherent in the radical changes described in the previous sections. The first result will appear in the 1972 *Year Book*.

FACTORY STATISTICS

Introduction

As explained in the previous section the integrated economic censuses have been a major undertaking involving the development of new concepts definitions and procedures. Inevitably there has been a considerable delay in finalising the results of the censuses and, for this chapter on manufacturing industry, it has been necessary to repeat the 1967-68 statistics; some later information for production of commodities is available and has been included.

Definitions in Factory Statistics, Prior to 1968-69

The statistics dealing with factories have been compiled from returns collected under the authority of the Commonwealth *Census and Statistics Act* and supplied annually by manufacturers. A return must be supplied for every factory, which is defined for this purpose as an establishment where four or more persons are employed or where power (other than manual) is used in any manufacturing process.

If a manufacturing business is conducted in conjunction with any other activity, particulars relating to the manufacturing section only are included in the statistics. Where two or more industries are conducted in the same establishment, a separate return is obtained for each industry, if practicable.

Manufacturers are required to state in their returns particulars of the number, wages, etc. of their employees, the value of premises and equipment and of factory stocks, the horsepower of machinery, the value, and, in many cases, the quantities of raw materials and fuel used, and quantities and values of principal articles produced. The returns obtained from manufacturers are not intended to show a complete record of the income and expenditure of factories nor to show the profits or losses of factories collectively or individually.

Employment Definitions

The average number of persons employed is compiled on two different bases: the average during the period of operation, and the average over the whole year. The former is simply the aggregate of the average number of persons employed in each factory during its period of operation (whether the whole or only part of the year). This average is used only for details dealing with the classification according to the number of persons employed. The latter, which is used in all other instances, is calculated by reducing the average number working in the factories to the equivalent number working for a full year.

Value Definitions

The value of factory output is the value of goods manufactured or their value after passing through the particular process of manufacture, and *includes the amount received for repair work*, work done on commission and receipts for other factory work. The basis of the valuation of the output is the selling value of the goods at the factory, exclusive of all delivery costs and charges and excise duties, but inclusive of Government bounty and subsidy payments.

The value of production is the value added to raw materials by the process of manufacture. It is calculated by deducting from the value of factory output the value (at the factory) of those items of cost, other than wages and salaries, specified on the factory statistical collection form, namely materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges); the remainder so derived is the value added to raw materials and represents the amount available for wages, taxation, rent, interest, insurance, etc. and profit.

Avoidance of Duplication in Values: Because of the duplication of materials used (which means that the finished product of one process of manufacture often forms raw material for another), an inaccurate impression would be obtained by using the value of factory output in inter-industry and in year-to-year comparisons. Woollen manufactures will illustrate the point. Greasy wool forms the raw material for the woolscouring industry, the product of which is scoured wool. This is afterwards combed into wool tops which are used in the spinning mills for the manufacture of yarn. In due course, the yarn is woven into cloth, the raw material for the clothing industry. If these processes are carried out separately in different factories, it is evident that the value of the wool would be counted at each of the five stages of manufacture, assuming value of output was used as the basis for comparisons.

The concept of *value added* (i.e. value of production) prevents this double counting and gives a truer picture of the relative economic importance of industries.

Classification of Factories

In the compilation of statistical data dealing with factories in Australia, a standard classification formulated at a Conference of Australian Statisticians in 1902 and periodically revised, was used until the year 1929-30. A new classification was introduced in 1930-31, and this, revised and extended to a minor degree in regard to sub-classes of industry in accordance with decisions of the Statisticians' Conference, 1945, applies to the Classification Tables which follow.

The classification system was again varied for the economic censuses of 1968-69; the changes involved have been discussed in the earlier section 'Integrated Economic Censuses, 1968-69'.

It should be noted that where a factory, engaged in the production of such goods as would entitle it to a classification in more than one sub-class of industry, is unable to give separate production costs, etc. for such activities, it is classified to its predominant activity. The concept of manufacturing is broadened in many fields to include repair work and some sub-classes of the basic classification which follows shortly are specifically reserved for repairing (e.g. IV-10 'Motor Vehicles—Repairs') while others include both construction and repair work (e.g. IV-7 'Construction and Repair' Tramcars and Railway Rolling Stock').

The list that follows shows *all* the classes and sub-classes in the Commonwealth classification of factories prior to the 1968-69 Integrated Economic Censuses. Each sub-class is followed by *the number of Tasmanian factories classified to that sub-class for the year shown*. It will be noted that many sub-classes contain a nil entry, indicating that no factory of this type exists in Tasmania, or alternatively, that no factory entitled to classification in more than one sub-class engages predominantly in the described activity. Despite this, the complete list has been given because the fact that particular types of industry do not exist in Tasmania may be just as significant as the fact that other types do exist.

Classification of Factories Showing Number in Each Class and Sub-Class of Industry 1967-68

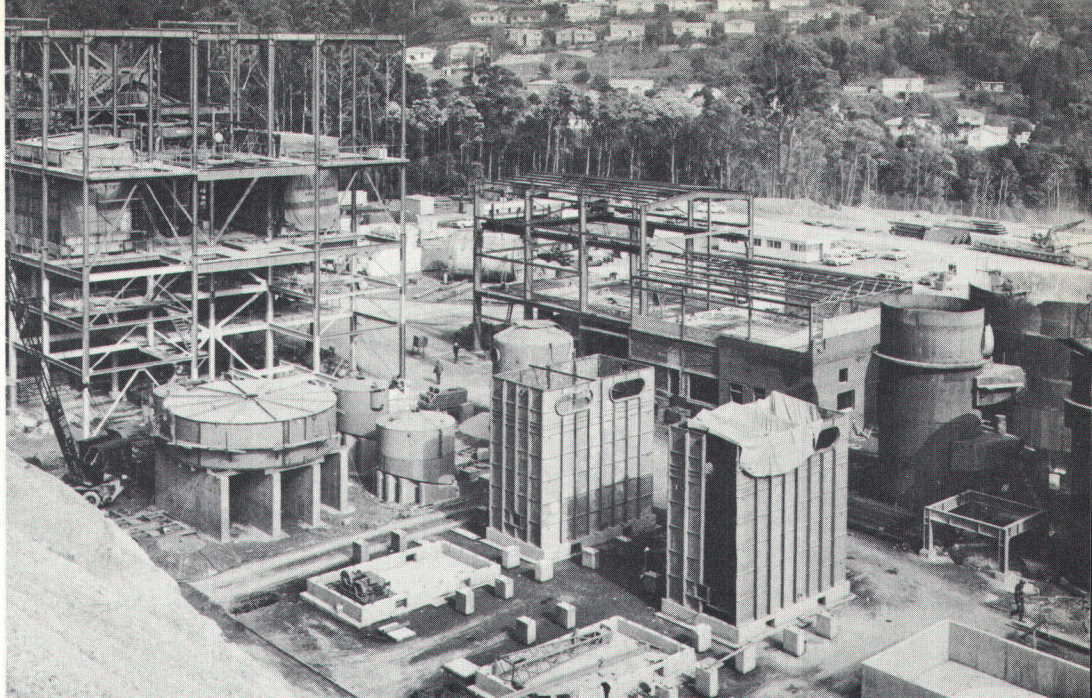
Class and Sub-Class	Number of Factories
<i>Class I. Treatment of Non-Metalliferous Mine and Quarry Products</i>	
1. Coke Works .. .. .	..
2. Briquetting and Pulverised Coal .. .. .	..
3. Carbide	1
4. Lime, Plaster of Paris, Asphalt	7
5. Fibrous Plaster and Products	9
6. Marble, Slate, etc.	3
7. Cement, Portland	1
8. Asbestos Cement Sheets and Mouldings	1
9. Other Cement Goods	36
10. Other .. .. .	..
Total Class I	58
<i>Class II. Bricks, Pottery, Glass, etc.</i>	
1. Bricks and Tiles	10
2. Earthenware, China, Porcelain, Terra Cotta	3
3. Glass (other than Bottles)	7
4. Glass Bottles	1
5. Other .. .. .	..
Total Class II	21

Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1967-68—continued

Class and Sub-Class	Number of Factories
<i>Class III. Chemicals, Dyes, Explosives, Paints, Oils, Grease</i>	
1. Industrial and Heavy Chemicals and Acids	6
2. Pharmaceutical and Toilet Preparations	1
3. Explosives (including Fireworks)	4
4. Whitelead, Paints, Varnishes	2
5. Oils—Vegetable	2
6. Mineral	10
7. Animal	2
8. Boiling Down, Tallow Refining	6
9. Soap and Candles	6
10. Chemical Fertilisers .. .. .	..
11. Inks, Polishes, etc. .. .. .	..
12. Matches .. .. .	..
13. Other .. .. .	..
Total Class III	31
<i>Class IV. Industrial Metals, Machines, Conveyances</i>	
1. Smelting, Converting, Refining, Rolling of Iron and Steel ..	1
2. Foundries (Ferrous)	3
3. Plant, Equipment and Machinery, incl. Machine Tools ..	39
4. Other Engineering	87
5. Extracting and Refining of Other Metals; Alloys	4
6. Electrical Machinery, Cables and Apparatus	25
Construction and Repair of Vehicles—	
Tramcars and Railway Rolling Stock—	
7. Government and Municipal	4
8. Other	1
Motor Vehicles—	
9. Construction and Assembly	1
10. Repairs	364
11. Motor Bodies	70
12. Horse Drawn Vehicles .. .. .	..
13. Motor Accessories	4
14. Aircraft	2
15. Cycles, Foot and Hand Driven, and Accessories	3
16. Other Conveyances .. .. .	..
Ship and Boat Building and Repairing, Marine Engineering—	
17. Government .. .. .	..
18. Other	13
19. Cutlery and Small Hand Tools	1
20. Agricultural Machines and Implements	11
Non-Ferrous Metals—	
21. Rolling and Extrusion .. .. .	..
22. Founding, Casting, etc.	8
24. Sheet Metal Working, Pressing and Stamping	32
25. Pipes, Tubes and Fittings—Ferrous .. .. .	..
26. Wire and Wire Working (incl. Nails)	9
27. Stoves, Ovens and Ranges	1
28. Gas Fittings and Meters .. .. .	..
29. Lead Mills .. .. .	..
30. Sewing Machines	1
31. Arms, Ammunition (excl. Explosives) .. .. .	..
32. Wireless and Amplifying Apparatus	12
33. Other Metal Works	2
Total Class IV	698
<i>Class V. Precious Metals, Jewellery, Plate</i>	
1. Jewellery .. .. .	..
2. Watches and Clocks (incl. Repairs)	14
3. Electroplating (Gold, Silver, Chromium, etc.)	5
Total Class V	19

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1967-68—continued**

Class and Sub-Class	Number of Factories
<i>Class VI. Textiles and Textile Goods (not Clothing except Knitted)</i>	
1. Cotton Ginning .. .. .	..
2. Cotton Spinning and Weaving .. .. .	..
3. Wool: Carding, Spinning, Weaving	6
4. Hosiery and Other Knitted Goods	5
5. Silk, Natural .. .. .	..
6. Rayon, Nylon and Other Synthetic Fibres	3
7. Flax Mills .. .. .	..
8. Rope and Cordage .. .. .	..
9. Canvas Goods, Tents, Tarpaulins, etc.	7
10. Bags and Sacks .. .. .	..
11. Textile Dyeing, Printing and Finishing	1
12. Other	2
Total Class VI	24
<i>Class VII. Skins and Leather (not Clothing or Footwear)</i>	
Furs, Skins, Leather—	
1. Furriers and Fur Dressing .. .. .	..
2. Woolsouring and Fellmongery	1
3. Tanning, Currying and Leather Dressing	1
Saddlery, Harness, Bags, Trunks and Other Goods of Leather and Leather Substitutes—	
4. Saddlery, Harness and Whips	2
5. Machine Belting (Leather or Other) .. .. .	..
6. Bags, Trunks and Other Goods of Leather and Leather Substitutes	1
Total Class VII	5
<i>Class VIII. Clothing (except Knitted)</i>	
1. Tailoring and Ready-made Clothing	13
2. Waterproof and Oilskin Clothing .. .. .	..
3. Dressmaking, Hemstitching	1
4. Millinery .. .. .	..
5. Shirts, Collars, Underclothing .. .. .	..
6. Foundation Garments .. .. .	..
7. Handkerchiefs, Ties, Scarves	1
8. Hats and Caps .. .. .	..
9. Gloves .. .. .	..
10. Boots and Shoes (not Rubber)	2
11. Boot and Shoe Repairing	32
12. Boot and Shoe Accessories .. .. .	..
13. Umbrellas and Walking Sticks .. .. .	..
14. Dyeworks and Cleaning (incl. Renovating and Repairing)	32
15. Other	1
Total Class VIII	82
<i>Class IX. Food, Drink and Tobacco</i>	
1. Flour Milling	5
2. Cereal Foods and Starch	2
3. Animal and Bird Foods	8
4. Chaffcutting and Corncrushing .. .. .	..
5. Bakeries (incl. Cakes and Pastry)	127
6. Biscuits	1
7. Sugar Mills .. .. .	..
8. Sugar Refining .. .. .	..
9. Confectionery (incl. Chocolate and Icing Sugar)	8
10. Jam, Fruit and Vegetable Canning	17
11. Pickles, Sauces, Vinegar	1
12. Bacon Curing	11
13. Butter Factories	12
14. Cheese Factories	7

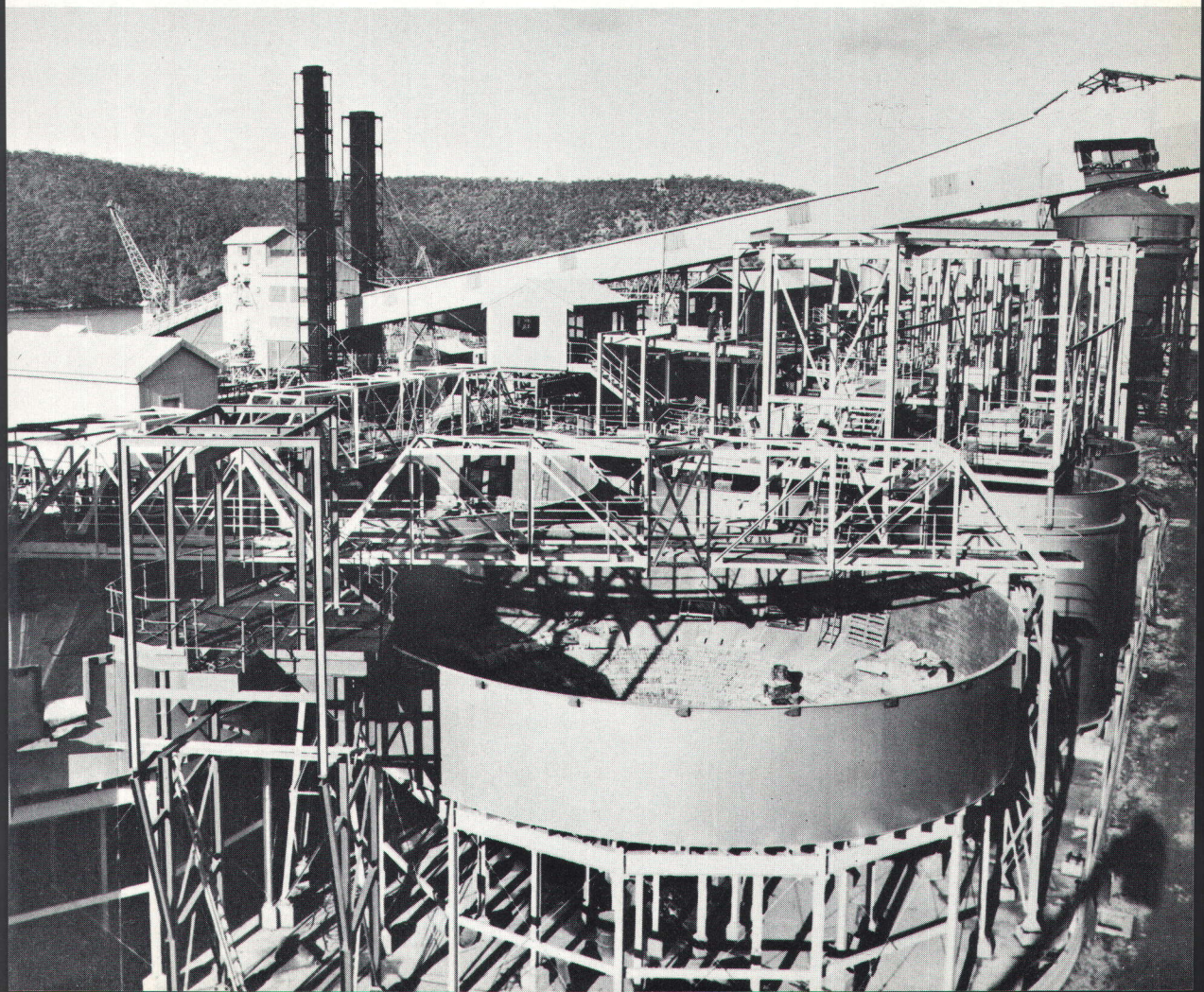


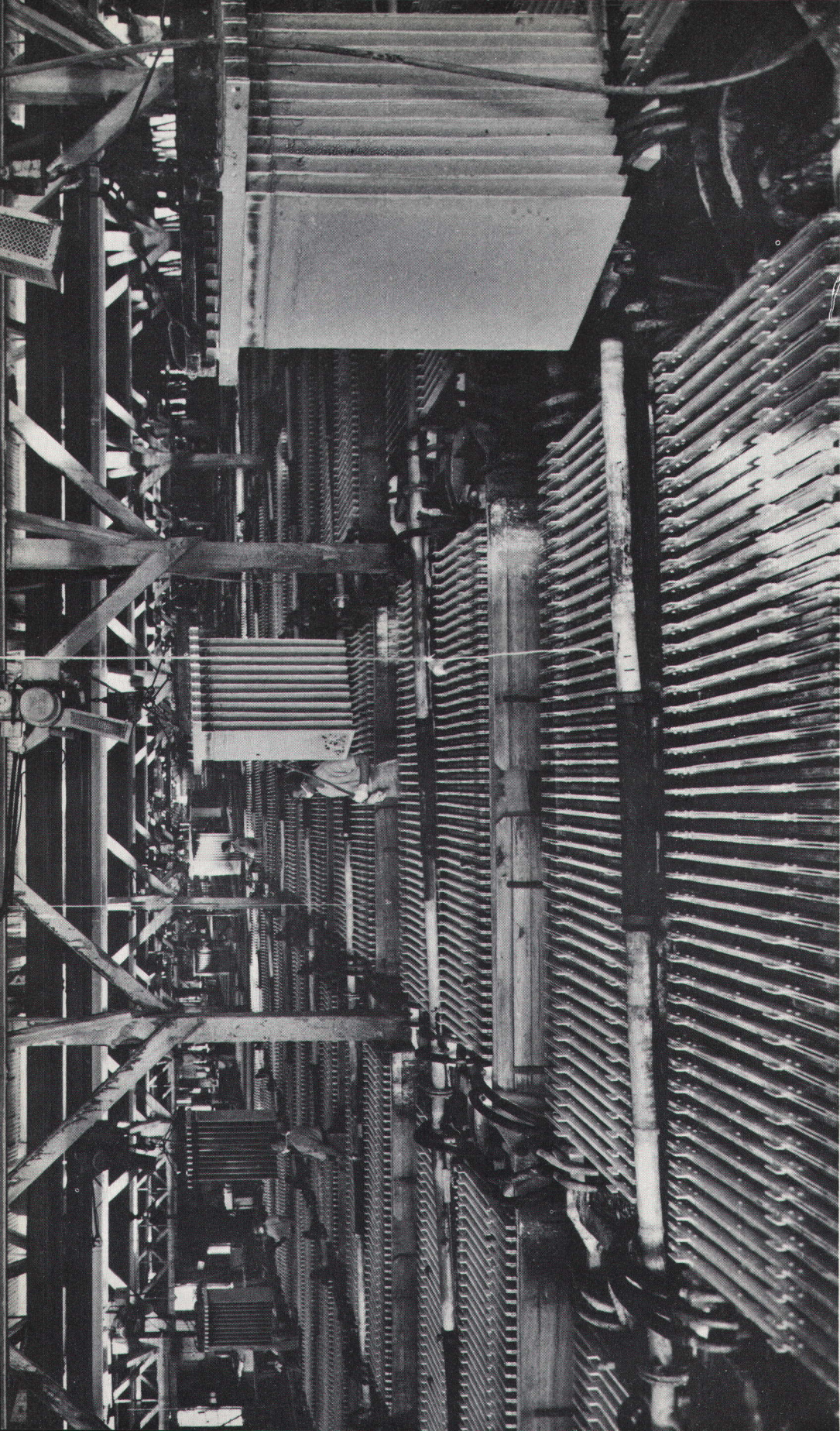
Sulphuric acid plant under construction at Burnie for North-West Acid Pty Ltd

(Dept of National Development)

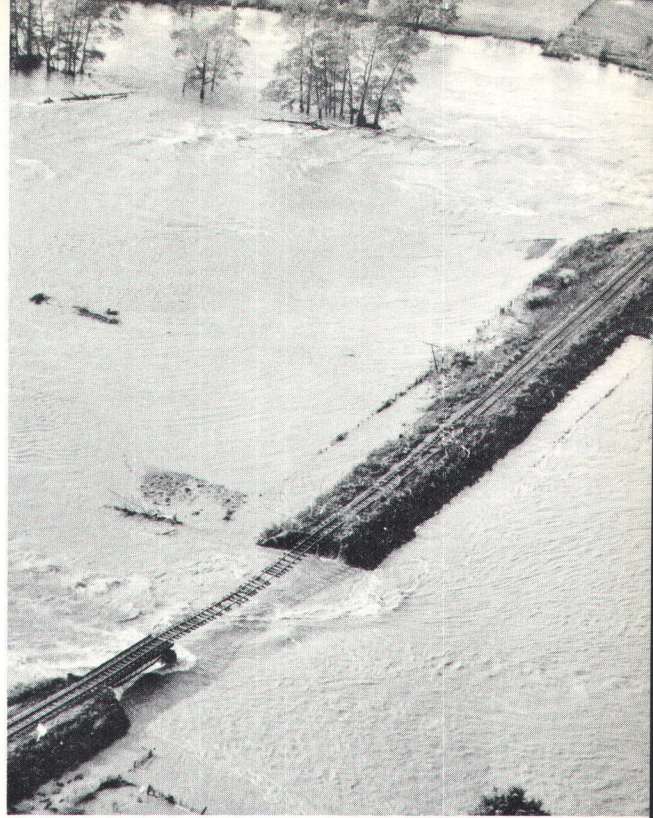
New Residue treatment plant under construction, E.Z. Co. (Asia) Ltd, Risdon

(Brian Curtis)





Electrolytic Cell-room, Electrolytic Zinc Co. (Asia), Risdon



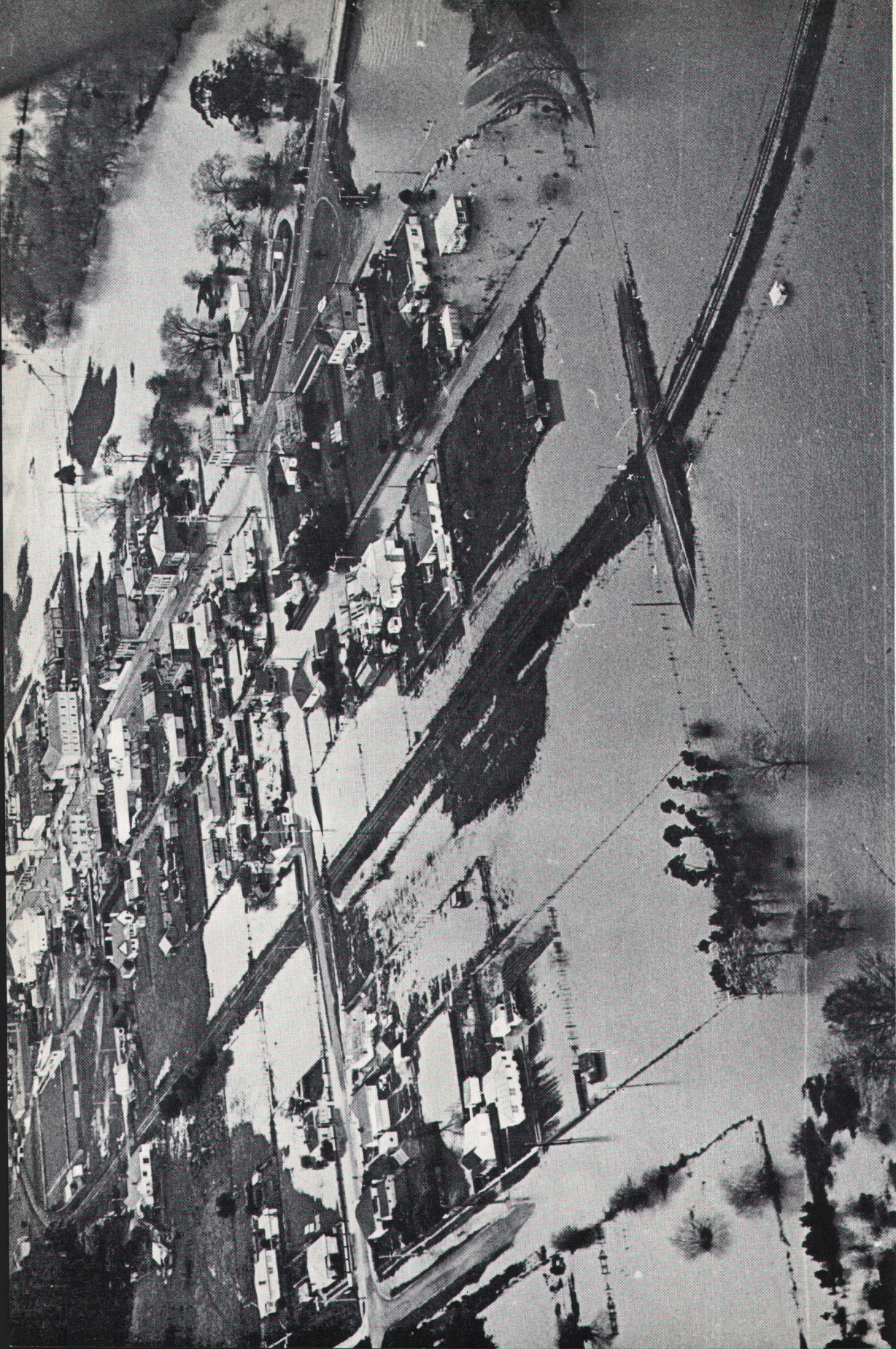
Flood damage to railway system, Kimberly

(Mercury)

Rescue team in operation, Latrobe flood

(Examiner)





Heavy flooding on the Mersey River at Lathskye

Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1967-68—continued

Class and Sub-Class	Number of Factories
<i>Class IX. Food, Drink and Tobacco—continued</i>	
15. Condensed and Dried Milk Factories	4
16. Margarine	1
17. Meat and Fish Preserving	15
18. Condiments, Coffee, Spices	3
19. Ice and Refrigerating	30
20. Salt .. .. .	..
21. Aerated Waters, Cordials, etc.	12
22. Breweries	2
23. Distilleries .. .. .	..
24. Winemaking	1
25. Cider and Perry	1
26. Malting	2
27. Bottling .. .. .	..
28. Tobacco, Cigars, Cigarettes, Snuff .. .. .	..
29. Dehydrated Fruit and Vegetables	4
30. Ice Cream	2
31. Sausage Skins	2
33. Other	1
Total Class IX	279
<i>Class X. Sawmills, Joinery Works, Boxes and Cases, Woodturning and Woodcarving</i>	
1. Sawmills	274
2. Plywood Mills (incl. Veneers)	1
3. Bark Mills	1
4. Joinery	105
5. Cooperage	3
6. Boxes and Cases	8
7. Woodturning, Woodcarving, etc.	4
8. Basketware and Wickerware, (incl. Seagrass and Bamboo Furniture)	2
9. Perambulators (incl. Pushers and Strollers) .. .. .	..
10. Wall and Ceiling Boards (not Plaster or Cement)	2
11. Other	3
Total Class X	403
<i>Class XI. Furniture of Wood, Bedding, etc.</i>	
1. Cabinet and Furniture Making (incl. Billiard Tables and Upholstery)	53
2. Bedding and Mattresses (not Wire)	6
3. Furnishing Drapery .. .. .	..
4. Picture Frames .. .. .	..
5. Blinds	6
Total Class XI	65
<i>Class XII. Paper, Stationery, Printing, Bookbinding, etc.</i>	
1. Newspapers and Periodicals	5
2. Printing, Government	2
3. Printing, General, incl. Bookbinding	31
4. Manufactured Stationery .. .. .	..
5. Stereotyping, Electrotyping .. .. .	..
6. Process and Photo Engraving .. .. .	..
7. Cardboard Boxes, Cartons and Containers	3
8. Paper Bags	3
9. Paper Making	4
10. Pencils, Penholders, Chalks, Crayons .. .. .	..
11. Other	2
Total Class XII	50

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1967-68—continued**

Class and Sub-Class						Number of Factories
<i>Class XIII. Rubber</i>						
1. Rubber Goods (incl. Tyres Made)	..	..	..	..	..	..
2. Tyre Retreading and Repairing	..	..	..	..	..	19
Total Class XIII	..	..	..	..	..	19
<i>Class XIV. Musical Instruments</i>						
1. Gramophones and Gramophone Records	..	..	..	..	..	..
2. Pianos, Piano Players, Organs	..	..	..	..	..	..
3. Other	..	..	..	..	..	..
Total Class XIV	..	..	..	..	..	..
<i>Class XV. Miscellaneous Products</i>						
1. Linoleum, Leathercloth, Oilcloth, etc.	..	..	..	..	..	..
2. Bone, Horn, Ivory and Shell	..	..	..	..	..	..
3. Plastic Moulding and Products	..	..	..	..	..	4
4. Brooms and Brushes	..	..	..	..	..	2
5. Optical Instruments and Appliances	..	..	..	..	..	4
6. Surgical and Other Scientific Instruments and Appliances	..	..	..	..	..	2
7. Photographic Material (incl. Developing and Printing)	..	..	..	..	..	1
8. Toys, Games and Sports Requisites	..	..	..	..	..	2
9. Artificial Flowers	..	..	..	..	..	..
10. Other	..	..	..	..	..	5
Total Class XV	..	..	..	..	..	20
<i>Class XVI. Heat, Light and Power</i>						
Electric Light and Power—						
1. Government	..	..	..	..	..	19
2. Local Authority	..	..	..	..	..	..
3. Companies	..	..	..	..	..	2
Gasworks—						
4. Government	..	..	..	..	..	..
5. Local Authority	..	..	..	..	..	..
6. Companies	..	..	..	..	..	2
Total Class XVI	..	..	..	..	..	23
Grand Total—All Classes	..	..	..	..	..	1,797

Summary of Factory Statistics

In the tables that follow, factory statistics, where appropriate, are presented in terms of the class of industry. However, our section entitled 'Individual Industries' is devoted to summary tables for the more important sub-classes of industry for which details are available for publication. (Further details for individual sub-classes for the year 1967-68 appear in the bulletin *Secondary Industries and Building*, a publication of the Tasmanian Office of the Bureau of Census and Statistics.)

The next table has been compiled to show factory development over a long period as measured by number of factories, employment, value of production, etc. In making comparisons over so long a period, account should be taken of changes in the purchasing power of money.

Development of Factories from 1911—Selected Years

Year	Number of Factories	Average Number of Persons Engaged (a)	Salaries and Wages Paid (b)	Value of—			
				Materials Used, Fuel, etc. (c)	Production (d)	Output	Land, Buildings, Plant and Machinery
	no.	no.	\$m	\$m	\$m	\$m	\$m
1911 ..	609	10,298	1.7	4.2	2.9	7.1	4.5
1920 ..	616	10,225	3.0	8.8	5.5	14.3	5.8
1929-30	845	10,820	4.1	10.0	7.1	17.1	19.9
1934-35	926	10,555	3.2	8.1	6.3	14.4	17.5
1939-40	980	14,670	5.4	13.5	12.5	26.0	21.1
1944-45	1,006	19,511	10.0	24.9	17.8	42.7	26.9
1949-50	1,456	23,506	19.3	51.5	38.7	90.2	44.8
1954-55	1,597	25,452	37.7	101.0	76.2	177.2	118.9
1959-60	1,683	29,662	57.6	147.7	120.4	268.1	251.3
1963-64	1,746	31,833	70.6	188.5	152.6	341.1	310.1
1964-65	1,805	32,580	76.5	214.2	167.3	381.5	364.3
1965-66	1,792	34,315	83.0	229.0	175.6	404.6	370.6
1966-67	1,771	34,879	90.8	243.4	194.6	438.0	403.1
1967-68	1,797	35,178	96.2	247.1	198.0	445.1	448.0

(a) Average for whole year after 1927-28; earlier averages relate to the period of operation. Includes working proprietors.

(b) Excludes drawings of working proprietors.

(c) Includes materials used plus cost of power, fuel, light, water and lubricating oils, containers, packing, etc., tools replaced and repairs to plant but excludes depreciation allowance and sundry overhead charges (e.g. rates, land tax, etc.) not specified on the factory form.

(d) Value of output less cost of materials used, fuel, etc. as defined in note (c).

Earlier, reference was made to the role played by hydro-electric power in the development of Tasmania's manufacturing industries. The next table has been compiled to show the sources of power employed to drive machinery in factories, and also the power available in the central electric stations; these series cannot be taken back to 1911 but the start-point, 1938-39, is early enough to illustrate the rapid growth in the application of industrial power.

Engines and Motors Employed in Factories; Generators in Central Electric Stations ('000 Horsepower)

Year	Factories—Rated Horsepower of Engines Ordinarily in Use (a)				Generators in Central Electric Stations (b)		
	Steam	Internal Combustion	Electric (c)	Total without Duplication (d)	Total Installed Capacity	Effective Capacity	Maximum Load
1938-39	4.0	2.5	48.2	54.8	158.9	126.0	117.0
1949-50	4.6	8.7	131.5	145.0	256.0	267.7	262.5
1959-60	1.2	11.7	251.9	265.1	778.8	771.0	587.1
1963-64	0.6	11.7	302.3	314.6	1,078.0	1,073.0	800.5
1964-65	0.5	13.1	308.5	322.2	1,149.6	1,144.6	828.9
1965-66	0.7	10.2	319.2	330.0	1,150.9	1,145.7	880.7
1966-67	1.0	9.6	329.5	340.1	1,212.2	1,207.0	876.4
1967-68	0.8	19.1	354.0	373.8	1,349.5	1,343.7	959.3

(a) Excluding central electric stations.

(b) The kilowatt measures for the stations have been changed to horsepower equivalents.

(c) Excludes motors driven by electricity of plants' own generation.

(d) Includes, until 1961-62, small amounts of water power driving factory machinery directly.

The effective capacity of the central electric stations is obviously more than adequate to meet the power needs of machines in factories but there is additional demand for power for metallurgical refining (e.g. electric furnaces and electrolytic processes), for traction and for commercial, farming and domestic purposes. In 1967-68, machines in Tasmanian factories were driven by engines and electric motors with a total rating of 373,840 horsepower of which 95 per cent was available from electric motors.

Factories in Tasmania and Other Australian States

A comparison of Tasmanian factory activity with that in the other States is shown in the following table. To compare the relative intensity of factory activity in the Australian States, account needs to be taken of their widely different populations and the first column in the table—'Population Relativity'—calls attention to this fact.

Australian States—Factories, 1967-68

State	Population Relativity (a)	Factories	Employment (Average Whole Year including Working Proprietors)	Salaries and Wages Paid (b)	Value of—			
					Materials Used, Fuel, etc. (c)	Production (d)	Output	Land, Buildings, Plant and Machinery
		no.	no.	\$m	\$m	\$m	\$m	\$m
N.S.W. ..	11.5	24,884	531,185	1,498.1	3,965.5	3,131.0	7,096.5	3,828.2
Victoria ..	8.7	18,030	449,945	1,244.2	2,956.5	2,394.8	5,351.3	2,685.3
Queensland	4.5	6,154	120,852	306.0	1,124.4	657.9	1,782.3	946.7
S.A. ...	2.9	6,255	121,417	330.1	844.2	631.9	1,476.1	813.6
W.A. ..	2.4	5,404	67,335	175.1	499.2	388.3	887.4	495.3
Tasmania ..	1.0	1,797	35,178	96.2	247.1	198.0	445.1	448.1
Total (e) ..	31.0	62,524	1,325,912	3,649.7	9,636.9	7,401.9	17,038.7	9,217.2

(a) Tasmania's total mean population for 1967-68 is expressed as 1.0; other State populations in proportion to 1.0.

(b) Excludes drawings of working proprietors.

(c) Includes materials used plus cost of power, fuel, light, water and lubricating oils, containers, packing, etc., tools replaced and repairs to plant but excludes depreciation allowance and sundry overhead charges not specified on the factory form.

(d) Value of output less cost of materials used, fuel, etc., as defined in note (c).

(e) Excludes A.C.T. and N.T.

Applying the appropriate population relativity factors to Tasmanian factory figures, it will be seen that, on most indicators, Tasmania is relatively more industrialised than W.A. and Queensland, that its pro-rata value of production approaches that of S.A. and that its pro-rata value of land, buildings, plant and machinery exceeds that of any other State. In regard to the last comparison (land, buildings, plant, etc.), account should be taken of the fact that central electric stations are treated as factories for the purpose of these statistics and, in the case of Tasmania, over 48 per cent of the value of land, buildings, plant and machinery is derived from a single factory class, namely 'XVI—Heat, Light and Power'. Since the other States rely for power largely on thermal generation not generally involving such heavy capital outlays as hydro-electric construction, the results are not unexpected.

Value of Production Comparison

The comparison of manufacturing in Tasmania with that for Australia as a whole produces some interesting results. Taking Tasmania's 'norm' as

3.2 per cent (based on population relativity), it can be established that the Island's principal contribution to Australian totals is in Class X, the sawmilling group, Class XII, the paper-making group, Class XVI, the power group, Class VI the textiles group and Class I, the non-metalliferous mining group. In all other classes, its performance falls below the norm.

The value of production for Tasmanian secondary industries is compared with the Australian value of production over a five-year period in the following table:

Factories, Value of Production: Tasmania and Australia Compared

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
TOTAL VALUE OF PRODUCTION (\$m)					
Tasmania	152.6	167.3	175.6	194.6	198.0
Australia	5,270.0	5,897.0	6,280.4	6,888.2	7,430.7
TASMANIAN COMPONENT AS PROPORTION OF AUSTRALIAN TOTAL (PER CENT)					
Class— I. Treatment of Non-Metalliferous					
Mine and Quarry Products ..	3.2	2.9	3.1	2.7	4.0
II. Bricks, Pottery, Glass, etc. ..	1.3	1.2	1.2	1.2	1.2
III. Chemicals, Dyes, etc. ..	1.6	1.6	1.5	1.4	1.3
IV. Industrial Metals, Machines, etc.	2.3	2.2	2.2	2.4	2.2
V. Precious Metals, Jewellery, Plate	0.7	0.6	0.6	0.4	0.8
VI. Textiles and Textile Goods (not Dress) ..	4.2	4.8	4.4	4.3	4.1
VII. Skins and Leather (not Clothing or Footwear) ..	0.4	0.4	0.4	0.5	0.4
VIII. Clothing (except Knitted) ..	0.6	0.7	0.7	0.6	0.6
IX. Food, Drink and Tobacco ..	3.2	3.1	3.0	3.0	2.7
X. Sawmills, Joinery, Boxes, etc.	6.6	6.8	7.2	6.7	6.6
XI. Furniture, Bedding, etc. ..	1.9	1.9	1.8	2.1	2.2
XII. Paper, Stationery, Printing, Binding, etc. ..	6.8	6.2	6.1	6.0	5.9
XIII. Rubber	0.7	0.7	0.7	0.7	0.7
XIV. Musical Instruments, etc. ..	..	..	..	..	..
XV. Miscellaneous Products ..	0.2	0.3	0.3	0.3	0.2
Total Classes I to XV ..	2.8	2.7	2.6	2.7	2.6
XVI. Heat, Light and Power ..	5.8	6.1	5.9	6.1	5.2
Total All Classes ..	2.9	2.8	2.8	2.8	2.7

A similar table is presented at the end of Chapter 7, 'Primary Industry—Non-Rural'; this details all recorded primary industries, as well as the manufacturing industry in total, to give an all-industry Tasmanian—Australian comparison for the same period.

Size Classification of Factories

The size classification of factories is based on the average number of persons employed during the period of operation and *includes working proprietors*. The following table has been compiled to show size changes in the structure of Tasmanian industry since 1928-29:

Number of Factories and Persons Employed by Size of Factory

Year	Size of Factory (i.e. Average Number of Persons Employed)							
	Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	101 and over	Total
NUMBER OF FACTORIES								
1928-29 ..	187	96	305	112	49	22	14	785
1938-39 ..	256	114	362	110	71	17	14	944
1948-49 ..	478	142	390	162	106	43	25	1,346
1958-59 ..	736	151	400	174	126	46	33	1,666
1967-68 ..	728	162	430	225	156	44	52	1,797
PERSONS EMPLOYED (a)								
1928-29 ..	430	384	2,091	1,632	1,558	1,492	3,984	11,571
1938-39 ..	582	456	2,422	1,569	2,252	1,155	6,231	14,667
1948-49 ..	1,062	568	2,633	2,344	3,308	3,033	10,549	23,497
1958-59 ..	1,447	604	2,755	2,589	3,869	3,298	14,278	28,840
1967-68 ..	1,380	648	2,949	3,248	5,004	3,183	19,024	35,436

- (a) The average number of persons employed as shown in the above table (35,436 in 1967-68) differs from the average number of persons employed shown in all other tables (35,178 in 1967-68) because the average number of persons employed over the period of operation used for size classification exceeds average employment over the whole year.

The change in the size structure of Tasmanian factories since 1928-29 is summarised in the next table:

Change in Average Number of Persons Employed
According to Size of Factory, 1928-29 to 1967-68

Particulars	Size of Factory (i.e. Average Number of Persons Employed)							
	Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	101 and over	Total
Increase in Number Employed—Persons ..	950	264	858	1,616	3,446	1,691	15,040	23,865
As Per Cent of Total Increase ..	4.0	1.1	3.6	6.8	14.4	7.1	63.0	100.0

As indicated in the previous table, the main characteristic of the period under review has been the marked increase in employment in the largest establishments employing 101 hands and over.

The apparent disproportionate increase in the number of factories employing less than four hands can be misleading. The increase is thought to be due largely to definitional factors; establishments with less than four hands are excluded if using only manual power but included if using other types of power. Thus, over the years, the greater use of fractional horsepower electric motors would have progressively qualified more and more small establishments as 'statistical factories'. (A two-man bakery mixing by hand is excluded; using a powered mixer, it is included.)

The next table has been compiled to indicate in which classes of industry the largest establishments occur:

Factories—Classification According to Number of Persons Employed in Each Industry Class, 1967-68

Class of Industry	Number of Factories Employing on the Average—				
	20 and under	21 to 50	51 to 100	101 and over	Total
I. Treatment of Non-Metalliferous Mine and Quarry Products	50	6	..	2	58
II. Bricks, Pottery, Glass, etc.	15	5	1	..	21
III. Chemicals, Dyes, etc.	27	2	..	2	31
IV. Industrial Metals, Machines, etc. ..	606	57	18	17	698
V. Precious Metals, Jewellery, Plate ..	19	..	..	..	19
VI. Textiles and Textile Goods (not Dress)	12	3	1	8	24
VII. Skins and Leather (not Clothing or Footwear)	4	1	..	..	5
VIII. Clothing (except Knitted)	76	3	3	..	82
IX. Food, Drink and Tobacco	231	33	7	8	279
X. Sawmills, Joinery, Boxes, etc. ..	367	24	7	5	403
XI. Furniture, Bedding, etc.	54	11	..	..	65
XII. Paper, Stationery, Printing, Binding, etc.	31	5	6	8	50
XIII. Rubber	17	2	..	..	19
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	19	1	..	..	20
Total Classes I to XV	1,528	153	43	50	1,774
XVI. Heat, Light and Power	17	3	1	2	23
Total All Classes	1,545	156	44	52	1,797

It will be seen that the largest establishments (101 hands and over) occur, with descending order of frequency in Class IV, industrial metals, etc.; Class XII, paper-making, etc.; Class VI, the textile group; Class IX, food-processing, etc.; and Class X, sawmilling, etc. As a later table will indicate, over 87 per cent of all factory employment is concentrated in these five classes.

Factories in Statistical Divisions

A general indication of the geographical distribution of factories is given in the following table, the analysis dealing with factory Classes I to XV inclusive. In Tasmania, factory Class XVI, 'Heat, Light and Power', has constituted something of a problem in any geographical distribution because the chief component of the class is the power houses, or 'central electric stations' generating electricity for the State Hydro-Electric Commission. To take a specific case, it is theoretically possible for the basic water storage to be in one statistical division, the generating stations in a second division and the point of delivery, through transmission lines, in seven other divisions. Since the output of energy from the stations is integrated into a State-wide grid, the allocation of value of output, value of production, etc. to various statistical divisions would merely confuse the issue; accordingly, Class XVI, 'Heat, Light and Power', is not dissected according to area and is completely excluded from the table.

Factories: Principal Items by Statistical Divisions and Selected Areas, 1967-68 (a)
Classes I-XV Only

Particulars	Factories (no.)	Employ- ment (no.)	Salaries and Wages Paid (\$'000)	Value (\$'000) of—			
				Materials Used, Fuel, etc.	Produc- tion	Output	Land, Buildings, Plant and Machinery
STATISTICAL DIVISIONS							
Hobart. . .	557	13,427	37,209	84,540	68,096	152,637	70,155
North Central. .	301	7,124	16,344	31,837	25,976	57,813	22,945
North Western	440	9,097	26,825	76,477	53,922	130,399	72,946
North Eastern	151	2,223	6,884	26,112	17,482	43,594	49,511
North Midland	90	1,190	2,926	8,753	5,121	13,875	5,920
Midland . .	57	257	597	1,605	1,148	2,754	430
South Eastern. .	31	135	278	829	297	1,126	1,160
Southern . .	118	693	1,481	4,685	2,864	7,548	6,159
Western . .	29	602	2,103	10,704	7,688	18,392	1,275
Total Classes I-XV . .	1,774	34,748	94,646	245,542	182,596	428,138	230,501
SELECTED AREAS							
Hobart Metro- politan Area	510	12,210	33,420	76,076	60,076	136,152	60,352
Urban Launce- ston . .	355	8,251	19,097	39,588	30,876	70,464	28,860
Remainder of State. . .	909	14,287	42,129	129,879	91,644	221,522	141,289
Total Classes I-XV . .	1,774	34,748	94,646	245,542	182,596	428,138	230,501

(a) Definitions of employment, salaries and wages, materials used, fuel, etc., and value of production have been given in initial summary tables.

As indicated in the previous table, the chief centre of factory activity, measured in terms of value of production, was the Hobart Statistical Division; its contribution to total added value was 37 per cent. Major establishments in the Division engaged in zinc and chemical fertiliser production, paper-making, carbide manufacture, confectionery making, fruit processing and various types of metalworking and engineering.

Contributing 30 per cent to the total value of production was the North Western Division, with major industries including paper manufacture, cement production, iron ore pellet production, plywood and building-board making, fruit and vegetable canning and preserving, and some textile making. The North Central Division (City of Launceston) contributed 14 per cent and is the acknowledged textile 'capital' of the State. Next came the North Eastern Division with 10 per cent, major establishments engaging in aluminium and ferro-manganese production, and food preserving. The principal industry in the Western Division (smelting of copper) ceased in December 1969; this Division contributed four per cent of the total value of production in 1967-68.

Factories Classified According to Class of Industry

The following table contains a summary of the principal statistics for factories by class of industry in Tasmania:

Principal Items by Class of Industry, 1967-68

Class of Industry	Factories	Employment	Salaries and Wages Paid	Value of—			
				Materials Used, Fuel, etc.	Production	Output	Land, Buildings, Plant and Machinery
	no.	no.	\$m	\$m	\$m	\$m	\$m
I. Treatment of Non-Metalliferous Mine and Quarry Products	58	888	2.73	7.11	8.11	15.22	10.88
II. Bricks, Pottery, Glass, etc. .. .	21	359	1.04	1.14	2.00	3.13	2.76
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease .. .	31	920	3.27	10.43	9.19	19.61	11.23
IV. Industrial Metals, Machines, Conveyances .. .	698	12,155	35.54	80.40	68.57	148.97	95.61
V. Precious Metals, Jewellery, Plate .. .	19	47	0.09	0.08	0.16	0.23	0.20
VI. Textiles and Textile Goods (not Dress) .. .	24	3,986	8.86	19.86	12.90	32.76	12.39
VII. Skins and Leather (not Clothing or Footwear) .. .	5	48	0.12	0.70	0.17	0.87	0.09
VIII. Clothing (except Knitted) .. .	82	726	1.22	1.13	2.33	3.46	2.41
IX. Food, Drink and Tobacco .. .	279	5,413	13.59	63.50	25.00	88.50	39.80
X. Sawmills, Joinery, Boxes, etc., Wood Turning and Carving .. .	403	3,919	9.65	24.93	17.96	42.89	13.13
XI. Furniture, Bedding, etc. .. .	65	672	1.33	2.74	2.31	5.04	1.91
XII. Paper, Stationery, Printing, Bookbinding, etc. .. .	50	5,314	16.54	32.56	32.65	65.21	38.13
XIII. Rubber .. .	19	139	0.36	0.77	0.80	1.57	1.12
XIV. Musical Instruments, etc. .. .	..	..	..	..	..	..	..
XV. Miscellaneous Products .. .	20	162	0.30	0.21	0.45	0.65	0.85
Total Classes I to XV .. .	1,774	34,748	94.65	245.54	182.60	428.14	230.50
XVI. Heat, Light and Power .. .	23	430	1.59	1.52	15.42	16.94	217.55
Total All Classes .. .	1,797	35,178	96.24	247.06	198.02	445.08	448.05

The next table shows the change in the number of factories in Tasmania during recent years:

Number of Factories in Each Class of Industry

Class of Industry	1957-58	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .	54	58	59	58	57	58
II. Bricks, Pottery, Glass, etc. .. .	21	19	23	23	23	21
III. Chemicals, Dyes, etc. .. .	22	28	29	30	29	31
IV. Industrial Metals, Machines etc. .. .	537	618	656	676	679	698
V. Precious Metals, Jewellery, Plate .. .	6	19	20	19	19	19
VI. Textiles and Textile Goods (not Dress) .. .	19	20	21	23	23	24
VII. Skins and Leather (not Clothing and Footwear) .. .	8	5	5	5	5	5
VIII. Clothing (except Knitted) .. .	84	87	87	83	81	82
IX. Food, Drink and Tobacco .. .	292	285	289	284	275	279
X. Sawmills, Joinery, Boxes, etc. .. .	460	440	446	425	411	403
XI. Furniture, Bedding, etc. .. .	71	70	66	62	65	65
XII. Paper, Stationery, Printing, Binding, etc. .. .	35	46	49	48	48	50
XIII. Rubber .. .	19	20	19	20	20	19
XIV. Musical Instruments, etc. .. .	14	..	..	..	..	..
XV. Miscellaneous Products .. .	14	14	19	20	19	20
Total Classes I to XV .. .	1,642	1,729	1,788	1,776	1,754	1,774
XVI. Heat, Light and Power .. .	13	17	17	16	17	23
Total All Classes .. .	1,655	1,746	1,805	1,792	1,771	1,797

Employment in Factories

All persons employed in the manufacturing activities of a factory, including proprietors working in their own business and persons working regularly at home (e.g. piece workers in the garment industry) are counted as factory workers, while those engaged in selling and distribution, such as salesmen, travellers, carters employed solely in *outward* delivery of manufactured goods, and retailing storemen, are excluded. The grouping of occupations comprises: (i) working proprietors; (ii) managerial and clerical staff including salaried managers and working directors; (iii) chemists, draftsmen, and other laboratory and research staff; (iv) workers in factories (skilled and unskilled); foremen and overseers; carters (excluding outward delivery only), messengers, and persons working regularly at home.

The figures showing average employment in factories represent the equivalent average number of persons employed, including working proprietors, over a full year.

The next table shows average whole-year employment in Tasmanian factories according to class of industry for a five-year period:

Employment—Total Number of Workers According to Class of Industry

Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	819	803	824	835	888
II. Bricks, Pottery, Glass, etc.	367	379	369	354	359
III. Chemicals, Dyes, etc.	943	979	1,021	995	920
IV. Industrial Metals, Machines, etc. ..	10,719	10,873	11,463	11,908	12,155
V. Precious Metals, Jewellery, Plate ..	45	41	46	47	47
VI. Textiles and Textile Goods (not Dress)	3,426	3,818	3,933	4,004	3,986
VII. Skins and Leather (not Clothing or Footwear)	47	48	48	47	48
VIII. Clothing (except Knitted)	710	755	746	729	726
IX. Food, Drink and Tobacco	5,053	4,995	5,358	5,376	5,413
X. Sawmills, Joinery, Boxes, etc.	3,886	4,021	4,200	4,066	3,919
XI. Furniture, Bedding, etc.	527	520	536	614	672
XII. Paper, Stationery, Printing, Binding, etc.	4,683	4,702	5,059	5,168	5,314
XIII. Rubber	129	126	144	151	139
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	111	134	151	158	162
Total Classes I to XV	31,465	32,194	33,898	34,452	34,748
XVI. Heat, Light and Power	368	386	417	427	430
Total All Classes	31,833	32,580	34,315	34,879	35,178

The factory class associated with the greatest employment in 1967-68 was Class IV, industrial metals, etc. with 34.6 per cent (the major sub-class of this class is 5, the extraction and refining of metals). The second greatest employment was in Class IX, food-processing, with 15.4 per cent; then follow Class XII, the paper-making group, with 15.1 per cent; Class VI, the textile group, with 11.3 per cent; and Class X, the sawmilling group, with 11.1 per cent. Nearly 90 per cent of Tasmanian factory employment is concentrated in these five classes which also contain the largest establishments.

The following table shows the number of males and females employed in factories according to occupational groups:

Employment—Occupational Grouping in Factories by Sex

Year		Working Proprietors		Salaried Staff				Wages Staff (c)		Total Workers			Masculinity of Factory Workers (d)
				Managerial, etc. (a)		Technical (b)							
		Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Per-sons	
1957-58	..	973	79	1,923	972	518	66	19,667	3,886	23,081	5,003	28,084	461
1963-64	..	930	71	2,434	1,146	512	110	22,345	4,285	26,221	5,612	31,833	467
1964-65	..	976	80	2,482	1,211	536	116	22,774	4,405	26,768	5,812	32,580	461
1965-66	..	963	75	2,641	1,298	538	120	23,899	4,781	28,041	6,274	34,315	447
1966-67	..	906	89	2,616	1,315	548	140	24,294	4,971	28,364	6,515	34,879	435
1967-68	..	887	88	2,841	1,363	571	144	24,251	5,033	28,550	6,628	35,178	431

(a) Managerial and clerical staff, including salaried managers and working directors.

(b) Chemists, draftsmen and other laboratory and research staff.

(c) Foremen, overseers, workers in factories (skilled and unskilled), carters (excluding outward delivery only), messengers and persons working regularly at home.

(d) Number of males per 100 females.

The long-term trend in masculinity of factory workers is illustrated by the following series: 1906, 565; 1911, 559; 1921, 532; 1930-31, 363; 1940-41, 353; 1950-51, 445; 1960-61, 464; 1967-68, 431. The maximum was 591 recorded in 1920 and the minimum, 289 in 1943-44. Very low masculinity figures in the continuous series from 1906 are associated with the depression years in the 1930s and with the war years in the 1940s. A later table shows the classes of industry in which women predominate.

The following table shows the age distribution of factory workers as at the last pay-day in June; the figures exclude working proprietors:

**Distribution of Employees According to Age
(Excluding Working Proprietors)**

Year	Number of Persons on Factory Payrolls on last Pay-day in June—							
	Males				Females			
	Under 16 years	16 and under 21 years	21 years and over	Total	Under 16 years	16 and under 21 years	21 years and over	Total
1958	100	2,611	19,203	21,914	113	1,426	3,796	5,335
1964	123	3,329	21,940	25,392	96	1,587	4,218	5,901
1965	121	3,441	22,253	25,815	107	1,672	4,166	5,945
1966	126	3,738	23,279	27,143	87	1,730	4,730	6,547
1967	141	3,814	23,570	27,525	131	1,763	4,971	6,865
1968	98	3,784	23,770	27,652	96	1,703	5,010	6,809

It will be observed that the proportion of factory workers under 16 years is extremely low, a reflection of the 16-year compulsory minimum leaving age operative in Tasmanian schools (the 'under 16' workers shown are not breaking the law since a system of exemption allows limited departure from the legal minimum age).

The next table has been compiled to show the considerable variation in the pattern of male and female employment in the different classes of industry:

Employment by Sex in Each Class of Industry, 1967-68

Class of Industry	Average Employment (Whole Year) including Working Proprietors					
	Number			Percentage in Each Class		
	Males	Females	Persons	Males	Females	Persons
I. Treatment of Non-Metalliferous Mine and Quarry Products ..	849	39	888	2.97	0.59	2.52
II. Bricks, Pottery, Glass, etc. ..	344	15	359	1.21	0.23	1.02
III. Chemicals, Dyes, etc. ..	862	58	920	3.02	0.88	2.62
IV. Industrial Metals, Machines, etc. ..	11,357	798	12,155	39.78	12.04	34.55
V. Precious Metals, Jewellery, Plate. ..	44	3	47	0.15	0.05	0.13
VI. Textiles and Textile Goods (not Dress) ..	1,772	2,214	3,986	6.21	33.40	11.33
VII. Skins and Leather (not Clothing or Footwear) ..	46	2	48	0.16	0.03	0.14
VIII. Clothing (except Knitted) ..	281	445	726	0.99	6.71	2.06
IX. Food, Drink and Tobacco	3,651	1,762	5,413	12.79	26.58	15.39
X. Sawmills, Joinery, Boxes, etc. ..	3,788	131	3,919	13.27	1.98	11.14
XI. Furniture, Bedding, etc. ..	548	124	672	1.92	1.87	1.91
XII. Paper, Stationery, Printing, Binding, etc. ..	4,329	985	5,314	15.16	14.86	15.11
XIII. Rubber ..	127	12	139	0.44	0.18	0.40
XIV. Musical Instruments, etc. ..	..	..	..	..	..	..
XV. Miscellaneous Products ..	124	38	162	0.43	0.57	0.46
Total Classes I to XV	28,122	6,626	34,748	98.50	99.97	98.78
XVI. Heat, Light and Power ..	428	2	430	1.50	0.03	1.22
Total All Classes ..	28,550	6,628	35,178	100.00	100.00	100.00

As demonstrated in the above table, female workers predominate in only two classes of industry in absolute numbers: Class VI, the textiles group and Class VIII, the clothing group. Four factory classes account for 87 per cent of all female workers; in descending order of magnitude, these classes are the textile group, the food-processing group, the paper-making group and the industrial metals group. The four factory classes accounting for most male employment (81 per cent) are, in descending order: the industrial metals group, the paper-making group, the sawmilling group and the food-processing group. When males and females are combined, the four major classes become the industrial metals group, the food-processing group, the paper-making group and the textiles group.

Salaries, Wages and Other Costs

The table that follows has been compiled to show male and female earnings and also to show separately the amounts paid to 'managerial and clerical staff, including salaried managers and working directors, chemists, draftsmen and other laboratory and research staff'.

Salaries and Wages in Factories (a), 1967-68
(\$'000)

Class of Industry	Managers, Clerical Staff, Chemists, Draftsmen, etc.		All Other Employees		Total		
	Males	Fe- males	Males	Fe- males	Males	Fe- males	Persons
I. Treatment of Non-Metalliferous Mine and Quarry Products	518	55	2,135	19	2,653	74	2,727
II. Bricks, Pottery, Glass, etc.	109	17	913	5	1,022	22	1,044
III. Chemicals, Dyes, etc.	825	100	2,328	16	3,153	116	3,269
IV. Industrial Metals, Machines, etc.	5,784	781	28,301	671	34,085	1,452	35,538
V. Precious Metals, Jewellery, Plate	4	5	78	..	82	5	88
VI. Textiles and Textile Goods (not Dress)	1,086	401	4,004	3,368	5,090	3,769	8,859
VII. Skins and Leather (not Clothing or Footwear)	32	..	88	1	120	1	121
VIII. Clothing (except Knitted)	122	39	492	570	614	609	1,223
IX. Food, Drink and Tobacco	2,337	720	8,487	2,047	10,824	2,767	13,591
X. Sawmills, Joinery, Boxes, etc.	982	100	8,497	77	9,478	177	9,655
XI. Furniture, Bedding, etc... .. .	171	60	995	103	1,167	162	1,329
XII. Paper, Stationery, Printing, Binding, etc.	2,435	442	12,423	1,244	14,858	1,686	16,543
XIII. Rubber	45	14	295	..	341	14	355
XIV. Musical Instruments, etc. .. .. .	..	..	..	38	..	..	..
XV. Miscellaneous Products.. .. .	43	12	211	..	254	50	304
Total Classes I to XV	14,494	2,746	69,248	8,159	83,742	10,905	94,646
XVI. Heat, Light and Power	132	..	1,454	3	1,587	3	1,590
Total All Classes	14,626	2,746	70,702	8,162	85,329	10,908	96,236

(a) Excludes drawings of working proprietors.

The ranking of factory classes according to salaries and wages paid in 1967-68 was: Class IV, 37 per cent; Class XII, 17 per cent; Class IX, 14 per cent; Class X, ten per cent; Class VI, nine per cent.

The total amount of wages and salaries paid in Tasmania, together with average amounts paid per employee, are shown in summary form:

Salaries and Wages Paid in Factories (a)

Year	Males		Females		Persons	
	Amount	Per Employee	Amount	Per Employee	Amount	Per Employee
	\$'000	\$	\$'000	\$	\$'000	\$
1957-58	45,033	2,038	5,609	1,140	50,641	1,874
1963-64	63,006	2,492	7,576	1,368	70,582	2,290
1964-65	68,183	2,644	8,332	1,454	76,515	2,427
1965-66	73,932	2,730	9,030	1,457	82,963	2,493
1966-67	80,685	2,939	10,071	1,567	90,756	2,678
1967-68	85,329	3,085	10,908	1,668	96,236	2,814

(a) Excludes drawings of working proprietors.

The relationship between salaries and wages, and other costs is shown in a subsequent section headed 'Relation of Costs to Output and Production'.

Costs of Manufacture (other than Salaries and Wages)

The next table has been compiled to summarise the various costs which are specified in the factory collection (apart from salaries and wages):

'Statistical' Costs of Manufacture Other Than Wages and Salaries (a)
(£'000)

Particulars	1957-58	1963-64	1964-65	1965-66	1966-67	1967-68
Power, Fuel and Light Used ..	9,775	15,768	17,676	18,453	19,026	18,651
Water Used (not as Power) ..	189	404	448	501	554	546
Lubricating Oils	183	193	203	227	246	287
Repairs and Replacements ..	5,978	7,795	9,407	9,564	11,225	11,883
Wrappers, Containers, Labels, etc.	7,284	9,722	10,644	11,552	11,315	12,606
Total (excluding Materials Used)	23,409	33,882	38,378	40,296	42,366	43,973
Materials Used	100,582	154,613	175,920	188,678	201,027	203,084
Total 'Statistical' Costs (a) ..	123,991	188,495	214,299	228,974	243,393	247,057

(a) 'Statistical' costs are restricted to those shown in the table and exclude items such as interest, rates and taxes, insurances, depreciation, etc.

As indicated in the above table, the two heaviest costs are those of power, fuel and light, and materials used in the manufacturing process. The following table shows the distribution of these costs and total costs between the various classes of industry:

'Statistical' Costs of Manufacture in Classes of Industry, 1967-68
(£'000)

Class of Industry	Materials Used	Power, Fuel and Light	Other Costs (a)	Total 'Statistical' Costs
I. Treatment of Non-Metalliferous Mine and Quarry Products	5,362	1,104	643	7,109
II. Bricks, Pottery, Glass, etc.	530	423	182	1,135
III. Chemicals, Dyes, etc.	8,295	1,027	1,104	10,426
IV. Industrial Metals, Machines, etc. ..	65,650	8,974	5,772	80,396
V. Precious Metals, Jewellery, Plate ..	70	5	2	78
VI. Textiles and Textile Goods (not Dress)	18,042	593	1,225	19,860
VII. Skins and Leather (not Clothing or Footwear)	678	9	11	698
VIII. Clothing (except Knitted)	945	81	107	1,132
IX. Food, Drink and Tobacco	51,692	1,603	10,202	63,496
X. Sawmills, Joinery, Boxes, etc.	22,457	887	1,587	24,932
XI. Furniture, Bedding, etc.	2,657	33	47	2,737
XII. Paper, Stationery, Printing, Binding, etc.	25,602	3,584	3,375	32,561
XIII. Rubber	687	42	46	775
XIV. Musical Instruments, etc. .. ..	..	..	..	..
XV. Miscellaneous Products	184	11	12	208
Total Classes I to XV	202,851	18,377	24,315	245,542
XVI. Heat, Light and Power	232	274	1,009	1,515
Total All Classes	203,083	18,651	25,322	247,058

(a) Water (not as power), lubricating oils, repairs and replacements, wrappers, containers, labels, etc.

The table below shows the expenditure on power, fuel and light analysed according to type:

Cost of Power, Fuel and Light Used in Factories
('\$000)

Year	Coal	Coke	Wood	Fuel Oil	Electricity	Gas	Other, including Steam	Total
1957-58 ..	2,354	655	437	1,336	4,634	69	289	9,775
1963-64 ..	1,368	645	158	3,251	9,697	73	576	15,768
1964-65 ..	1,085	578	132	3,634	11,522	76	649	17,676
1965-66 ..	596	654	137	4,073	12,207	76	711	18,453
1966-67 ..	545	727	111	4,167	12,742	94	640	19,026
1967-68 ..	564	686	85	5,191	11,366	92	667	18,651

Coal is not being used to the same extent as previously; in 1957-58, 246,525 tons were used, compared with 54,900 tons in 1967-68. In contrast, factory fuel oil consumption has increased from 8,181,000 gallons in 1957-58 to 67,314,000 gallons in 1967-68. The present importance of electricity for factories is underlined by the fact that its cost in 1967-68 represented 61 per cent of the total cost of power, fuel and light (in contrast with 1957-58 when it represented only 47 per cent); in the same period, the rated horsepower of electric motors ordinarily in use in factories has increased more than 45 per cent but the major factor in the increased use of electrical power has been in metallurgical refining (electric furnaces and electrolytic recovery).

The next table shows, in summary form, the cost of power, fuel and light used in each class of industry for a five-year period:

Cost of Power, Fuel and Light Used in Each Class of Industry
('\$000)

Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	911	1,046	963	816	1,104
II. Bricks, Pottery, Glass, etc.	337	336	347	355	423
III. Chemicals, Dyes, etc.	1,263	1,591	1,703	1,503	1,027
IV. Industrial Metals, Machines, etc.	7,369	8,414	8,663	9,553	8,974
V. Precious Metals, Jewellery, Plate	4	4	5	6	5
VI. Textiles and Textile Goods (not Dress)	530	542	547	577	593
VII. Skins and Leather (not Clothing or Footwear)	10	8	9	8	9
VIII. Clothing (except Knitted)	79	79	79	78	81
IX. Food, Drink and Tobacco	1,238	1,307	1,399	1,484	1,603
X. Sawmills, Joinery, Boxes, etc.	730	854	881	858	887
XI. Furniture, Bedding, etc.	21	23	23	30	33
XII. Paper, Stationery, Printing, Binding, etc.	3,207	3,402	3,760	3,685	3,584
XIII. Rubber	36	34	36	39	42
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	7	9	11	10	11
Total Classes I to XV	15,742	17,650	18,429	19,001	18,377
XVI. Heat, Light and Power	26	25	24	25	274
Total All Classes	15,768	17,676	18,453	19,026	18,651

As indicated in the previous table, the total cost of power, fuel and light has increased \$2,883,000 (18 per cent) in the five-year period to 1967-68, and most of the rise can be accounted for in the industrial metals group, where the cost has increased \$1,605,000 (22 per cent).

The largest single cost in manufacturing is that of the materials used and the next table shows, in summary form, this cost in each class of industry for a five-year period:

**Cost of Materials Used in Each Class of Industry
(\$'000)**

Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	4,437	3,982	4,940	5,275	5,362
II. Bricks, Pottery, Glass, etc.	351	432	424	455	530
III. Chemicals, Dyes, etc.	5,438	6,366	6,911	7,903	8,295
IV. Industrial Metals, Machines, etc.	50,772	61,612	63,576	66,266	65,650
V. Precious Metals, Jewellery, Plate	32	34	37	45	70
VI. Textiles and Textile Goods (not Dress)	16,775	17,810	18,215	18,560	18,042
VII. Skins and Leather (not Clothing or Footwear)	630	826	701	857	678
VIII. Clothing (except Knitted)	799	937	979	903	945
IX. Food, Drink and Tobacco	37,127	41,569	45,928	50,962	51,692
X. Sawmills, Joinery, Boxes, etc.	16,805	18,465	20,545	21,739	22,457
XI. Furniture, Bedding, etc.	1,693	1,916	1,984	2,389	2,657
XII. Paper, Stationery, Printing, Binding, etc.	18,902	20,996	23,188	24,507	25,602
XIII. Rubber	475	521	627	753	687
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	102	153	330	190	184
Total Classes I to XV	154,338	175,621	188,384	200,804	202,851
XVI. Heat, Light and Power	275	299	294	223	232
Total All Classes	154,613	175,920	188,678	201,027	203,084

The total cost of materials used in manufacturing has risen \$48,471,000 (31 per cent) in the five-year period covered by the table.

Value of Output and Value of Production

Value of factory output by classes of industry for a five-year period is shown in the following table:

**Value of Factory Output
(\$ million)**

Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	10.58	10.38	11.68	11.75	15.22
II. Bricks, Pottery, Glass, etc.	2.26	2.58	2.58	2.68	3.13
III. Chemicals, Dyes, etc.	14.90	16.93	17.88	19.78	19.61
IV. Industrial Metals, Machines, etc.	110.66	128.85	134.91	150.04	148.97
V. Precious Metals, Jewellery, Plate	0.17	0.17	0.19	0.20	0.23
VI. Textiles and Textile Goods (not Dress)	28.70	32.90	32.35	33.45	32.76
VII. Skins and Leather (not Clothing or Footwear)	0.81	1.01	0.89	1.06	0.87
VIII. Clothing (except Knitted)	2.78	3.13	3.30	3.22	3.46
IX. Food, Drink and Tobacco	68.55	74.59	81.07	88.85	88.50
X. Sawmills, Joinery, Boxes, etc.	32.30	36.44	40.21	41.15	42.89
XI. Furniture, Bedding, etc.	3.24	3.58	3.71	4.54	5.04
XII. Paper, Stationery, Printing, Binding, etc.	50.41	53.72	57.86	61.37	65.21
XIII. Rubber	1.18	1.19	1.30	1.55	1.57
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.39	0.51	0.77	0.64	0.65
Total Classes I to XV	326.93	365.97	388.71	420.28	428.14
XVI. Heat, Light and Power	14.13	15.58	15.88	17.68	16.94
Total All Classes	341.06	381.55	404.58	437.96	445.08

In the section dealing with the definitions used in factory statistics, it was indicated that value of output is not a satisfactory indicator for making year-to-year comparisons or for making comparisons between classes of industry. To the extent that the finished article from one industry may become a material for use in the manufacturing process of another industry, values of output are likely to be inflated by 'double-counting'. Cardboard boxes and containers, for example, are a finished product of Class XII but they may be used to pack the products of industries in most other classes; similarly, electric power is a final output from Class XVI but is also taken into all other industry classes as a cost of production. For these and other considerations, the better measure for purposes of comparison is undoubtedly value of production (i.e. value of output less 'statistical' costs but with no deduction of wages and salaries).

The next table shows the value of production in Tasmanian factories for a five-year period:

**Value of Factory Production
(\$ million)**

Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	4.77	4.86	5.21	5.08	8.11
II. Bricks, Pottery, Glass, etc.	1.43	1.64	1.69	1.74	2.00
III. Chemicals, Dyes, etc.	7.15	7.88	8.15	9.17	9.19
IV. Industrial Metals, Machines, etc. ..	49.25	54.50	58.17	68.79	68.57
V. Precious Metals, Jewellery, Plate ..	0.13	0.13	0.14	0.15	0.16
VI. Textiles and Textile Goods (not Dress)	10.50	13.48	12.46	13.11	12.90
VII. Skins and Leather (not Clothing or Footwear)	0.16	0.16	0.17	0.19	0.17
VIII. Clothing (except Knitted)	1.82	2.02	2.13	2.14	2.33
IX. Food, Drink and Tobacco	22.47	23.17	24.42	27.20	25.00
X. Sawmills, Joinery, Boxes, etc. ..	13.58	15.67	17.32	17.08	17.96
XI. Furniture, Bedding, etc.	1.47	1.60	1.66	2.07	2.31
XII. Paper, Stationery, Printing, Binding, etc.	25.72	26.52	28.03	30.15	32.65
XIII. Rubber	0.64	0.59	0.60	0.72	0.80
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.27	0.33	0.41	0.42	0.45
Total Classes I to XV	139.36	152.56	160.57	178.00	182.60
XVI. Heat, Light and Power	13.21	14.69	15.03	16.57	15.42
Total All Classes	152.57	167.25	175.61	194.57	198.02

The value of production for all factories has risen by 30 per cent in the period covered by the table. Corresponding increases in 'added value' for individual classes are: Class IV, the industrial metals group, 39 per cent; Class VI, the textiles group, 23 per cent; Class IX, the food-processing group, 11 per cent; Class X, the sawmilling group, 32 per cent; Class XII, the paper-making group, 27 per cent; and Class XVI, the power group, 17 per cent.

The class of industry showing the greatest percentage increase was Class I, Treatment of Non-Metalliferous Mine and Quarry Products, 70 per cent.

Relation of Costs to Output and Production

The costs data collected from factories are not complete but cover major items such as materials used; power, fuel and light; and lubricants, water and containers, etc. The following table summarises these costs for each class of industry and gives the balance remaining after such costs, together with salaries

and wages, have been deducted from the value of output. The balance so obtained for each industry is the fund available to provide for all other costs and overhead expenses such as rent, interest, insurance, pay-roll tax, income tax, depreciation, etc., as well as drawings by working proprietors and profit.

Factory Costs, Output and Residual Balance, 1967-68

('\$000)

Class of Industry	Specified Costs of Production			Balance between Value of Output and Specified Costs (b)	Value of Output
	Materials Used	Other 'Statistical' Costs (a)	Salaries and Wages		
I. Treatment of Non-Metalliferous Mine and Quarry Products	5,362	1,747	2,727	5,385	15,221
II. Bricks, Pottery, Glass, etc.	530	605	1,044	955	3,134
III. Chemicals, Dyes, etc.	8,295	2,131	3,269	5,920	19,614
IV. Industrial Metals, Machines, etc. ..	65,650	14,746	35,538	33,036	148,969
V. Precious Metals, Jewellery, Plate ..	70	8	88	67	233
VI. Textiles and Textile Goods (not Dress)	18,042	1,818	8,859	4,043	32,762
VII. Skins and Leather (not Clothing or Footwear)	678	20	121	52	871
VIII. Clothing (except Knitted)	945	188	1,223	1,110	3,465
IX. Food, Drink and Tobacco	51,692	11,804	13,591	11,412	88,500
X. Sawmills, Joinery, Boxes, etc. ..	22,457	2,475	9,655	8,307	42,894
XI. Furniture, Bedding, etc.	2,657	80	1,329	978	5,044
XII. Paper, Stationery, Printing, Binding, etc.	25,602	6,959	16,543	16,102	65,207
XIII. Rubber	687	88	355	441	1,571
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	184	23	304	141	653
Total Classes I to XV	202,851	42,691	94,646	87,949	428,138
XVI. Heat, Light and Power	232	1,283	1,590	13,833	16,938
Total All Classes	203,084	43,974	96,236	101,782	445,076

(a) Power, fuel, light, water, lubricating oil, repairs and replacements, wrappers, containers, labels, etc.

(b) Balance available for costs and charges not specified on the factory form, and for profit (including drawings by working proprietors).

The *value of production* (value of output less costs other than labour) does not appear in the above table but these details are set out in the table on the preceding page.

There are considerable variations in the proportions which the cost of materials and the expenditure on wages bear to the value of output in the various classes of industry. These are, of course, due to the difference in treatment required to convert the materials to their final form. Class XVI, heat, light and power, obviously constitutes a major deviation from all other classes of industry; the major component in this class is hydro-electric power production characterised by heavy capital expenditure and extremely light operational costs since the basic 'raw material' is water. The comparatively large residual balance attributable to Class XVI is required to meet a heavy burden in interest and depreciation charges associated with the substantial outlay of capital which created the water storages and generating capacity.

In the following table, the previous data on costs and residual balances have been converted to percentages of the value of output for each class of industry:

**Factory Costs and Residual Balance as Proportion of Value of Output, 1967-68
(Per Cent)**

Class of Industry	Specified Costs of Production			Balance between Value of Output and Specified Costs	Value of Output
	Materials Used	Other 'Statistical' Costs	Salaries and Wages		
I. Treatment of Non-Metalliferous Mine and Quarry Products	35.2	11.5	17.9	35.4	100.0
II. Bricks, Pottery, Glass, etc.	16.9	19.3	33.3	30.4	100.0
III. Chemicals, Dyes, etc.	42.3	10.9	16.7	30.2	100.0
IV. Industrial Metals, Machines, etc. ..	44.1	9.9	23.9	22.2	100.0
V. Precious Metals, Jewellery, Plate ..	30.2	3.3	37.6	28.9	100.0
VI. Textiles and Textile Goods (not Dress)	55.1	5.6	27.0	12.3	100.0
VII. Skins and Leather (not Clothing or Footwear)	77.9	2.3	13.9	5.9	100.0
VIII. Clothing (except Knitted)	27.3	5.4	35.3	32.0	100.0
IX. Food, Drink and Tobacco	58.4	13.3	15.4	12.9	100.0
X. Sawmills, Joinery, Boxes, etc.	52.4	5.8	22.5	19.4	100.0
XI. Furniture, Bedding, etc.	52.7	1.6	26.4	19.4	100.0
XII. Paper, Stationery, Printing, Binding, etc.	39.3	10.7	25.4	24.7	100.0
XIII. Rubber	43.7	5.6	22.6	28.1	100.0
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	28.2	3.6	46.6	21.6	100.0
Total Classes I to XV	47.4	10.0	22.1	20.5	100.0
XVI. Heat, Light and Power	1.4	7.6	9.4	81.7	100.0
Total All Classes	45.6	9.9	21.6	22.9	100.0

The next table has been compiled to summarise total specified costs of production, residual balances and value of output:

Total Factory Costs, Output and Residual Balance

Year			Specified Costs of Production			Balance between Value of Output and Specified Costs (<i>b</i>)	Value of Output
			Materials Used	Other 'Statistical' Costs (<i>a</i>)	Salaries and Wages		
VALUE (\$'000)							
1962-63	..	..	131,101	30,786	64,836	77,198	303,920
1963-64	..	..	154,613	33,882	70,582	81,988	341,065
1964-65	..	..	175,920	38,379	76,515	90,735	381,549
1965-66	..	..	188,678	40,296	82,963	92,644	404,581
1966-67	..	..	201,027	42,366	90,756	103,815	437,964
1967-68	..	..	203,084	43,974	96,236	101,782	445,076

Total Factory Costs, Output and Residual Balance—*continued*

Year	Specified Costs of Production			Balance between Value of Output and Specified Costs (<i>b</i>)	Value of Output		
	Materials Used	Other 'Statistical' Costs (<i>a</i>)	Salaries and Wages				
PROPORTION OF VALUE OF OUTPUT (PER CENT)							
1962-63	43.1	10.1	21.3	25.4	100.0
1963-64	45.4	9.9	20.7	24.0	100.0
1964-65	46.1	10.1	20.0	23.8	100.0
1965-66	46.6	10.0	20.5	22.9	100.0
1966-67	45.9	9.7	20.7	23.7	100.0
1967-68	45.6	9.9	21.6	22.9	100.0

(a) Power, fuel, light, water, lubricating oils, repairs and replacements, wrappers, containers, labels, etc.

(b) Balance available for costs and charges not specified on the factory form and for profit (including drawings by working proprietors).

Land, Buildings, Plant and Machinery

The values recorded in this section are generally the *values shown in the books* of the individual firms after allowance has been made for depreciation, but they include estimates of the capital value of rented premises and plant. The totals shown in the tables consequently do not represent the actual amount of capital invested in industry and are largely influenced by individual accounting methods and policies in use at a given point in time.

Where land and buildings, etc. and plant and machinery, etc. are rented by occupiers of factories, their capital value has been computed by capitalising the rent paid at fifteen years' and ten years' purchase respectively.

The table that follows shows the value of land and buildings used in connection with the various classes of manufacturing industries for a five-year period. Excluding Class XVI which is a special case because of its coverage of hydro-electric power generation, it will be seen that the value of land and buildings is greatest in Class IV (\$37.72m), Class IX (\$20.85m) and Class XII (\$15.22m). An examination of the value of plant and machinery in a subsequent table shows the same classes as the three most prominent, namely Class IV (\$57.90m), Class XII (\$22.91m) and Class IX (\$18.94m). Associated with Class IV are major establishments at George Town, Risdon, Port Latta and Mt Lyell, all concerned with the extraction and refining of metals (aluminium, ferro-manganese alloys, zinc, iron ore pellets and copper). Included in Class XII are major establishments at Burnie, Boyer and Geeveston, producing fine paper, newsprint and paper pulp. Class IX includes the northern and southern breweries, a major confectionery factory and a variety of large food-processing establishments.

A high level of investment in plant and machinery and in land and buildings normally can be correlated with a high level of employment, for particular classes of industry. Class X, the sawmilling group, appears to be an exception to this rule; employment in this class is not significantly lower than for Class IX, the food group, or Class XII, the paper-making group, but the value of land, plant, etc. is very much less in Class X than in Classes IX or XII.

**Value at 30 June of Land and Buildings in Each Class of Industry
(\$ million)**

Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	1.64	1.78	1.72	1.88	2.13
II. Bricks, Pottery, Glass, etc.	1.03	1.14	1.23	1.29	1.45
III. Chemicals, Dyes, etc.	3.01	3.17	3.56	3.65	3.87
IV. Industrial Metals, Machines, etc.	28.95	30.23	31.19	32.88	37.72
V. Precious Metals, Jewellery, Plate	0.14	0.17	0.14	0.15	0.15
VI. Textiles and Textile Goods (not Dress)	3.52	4.35	4.55	4.47	4.80
VII. Skins and Leather (not Clothing or Footwear)	0.08	0.07	0.06	0.06	0.06
VIII. Clothing (except Knitted)	1.70	1.85	1.80	1.76	1.78
IX. Food, Drink and Tobacco	16.58	17.74	18.88	20.00	20.85
X. Sawmills, Joinery, Boxes, etc.	4.62	5.22	5.81	6.17	6.28
XI. Furniture, Bedding, etc.	0.99	1.10	1.12	1.42	1.53
XII. Paper, Stationery, Printing, Binding, etc.	12.98	13.12	13.72	14.09	15.22
XIII. Rubber	0.87	0.69	0.72	0.79	0.80
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.25	0.37	0.44	0.42	0.49
Total Classes I to XV	76.36	81.00	84.93	89.04	97.13
XVI. Heat, Light and Power	92.04	128.01	126.99	144.94	166.23
Total All Classes	168.40	209.01	211.92	233.98	263.36

The value of land and buildings associated with Class XVI, 'Heat, Light and Power', is greater than the corresponding total value for all other factory classes. The chief component of Class XVI—hydro-electric power generation—has involved the creation of extensive dams, storages and flumes and the book value of such installations is included under 'land and buildings'; the actual generating plant, however, is included under 'plant and machinery'.

The next table shows the value of plant and machinery in each class of industry for a five-year period:

**Value at 30 June of Plant and Machinery in Each Class of Industry
(\$ million)**

Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	2.49	2.56	3.95	8.55	8.75
II. Bricks, Pottery, Glass, etc.	0.61	0.69	0.79	0.89	1.32
III. Chemicals, Dyes, etc.	6.66	7.43	7.71	7.48	7.36
IV. Industrial Metals, Machines, etc.	39.89	40.59	40.71	45.79	57.90
V. Precious Metals, Jewellery, Plate	0.03	0.03	0.03	0.04	0.04
VI. Textiles and Textile Goods (not Dress)	6.65	8.84	8.22	8.07	7.58
VII. Skins and Leather (not Clothing or Footwear)	0.04	0.04	0.04	0.04	0.03
VIII. Clothing (except Knitted)	0.82	0.68	0.63	0.62	0.63
IX. Food, Drink and Tobacco	14.60	15.09	16.62	18.02	18.94
X. Sawmills, Joinery, Boxes, etc.	5.97	6.78	7.65	7.50	6.85
XI. Furniture, Bedding, etc.	0.23	0.21	0.25	0.34	0.38
XII. Paper, Stationery, Printing, Binding, etc.	26.07	25.55	25.23	22.95	22.91
XIII. Rubber	0.28	0.26	0.30	0.25	0.32
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.06	0.23	0.33	0.37	0.36
Total Classes I to XV	104.40	108.99	112.47	120.91	133.37
XVI. Heat, Light and Power	37.25	46.35	46.20	48.25	51.31
Total All Classes	141.65	155.34	158.67	169.16	184.68

Additions, Replacements and Depreciation Allowed

In stating the current book value of land and buildings and of plant and machinery, each factory proprietor is required to complete a reconciliation along the following lines:

	Land and Buildings	Plant and Machinery
	\$	\$
(i) Book value at beginning of year ..		
Plus (ii) Additions and replacements during year ..		
Less (iii) Depreciation allowed during year ..		
Less (iv) Sales and losses by fire, etc., during year ..		
(±) (v) Adjustment due to revaluation ..		
(vi) Book value at end of year ..		

If no proprietors used rented land and buildings or rented plant and machinery, then the totals for the items 'additions and replacements' and 'depreciation allowed' would give a complete record of these important capital items in the factory sector. However, factory proprietors who rent premises or plant are simply required to report the annual rental and, to this extent, the totals for additions and replacements, and depreciation allowed, are incomplete since they refer only to land, buildings, plant and machinery *owned* by the factory proprietor. In 1967-68, 7.6 per cent of the value of land and buildings comprised rentals capitalised at 15 years' purchase while 2.6 per cent of the value of plant and machinery comprised rentals capitalised at 10 years' purchase. The following table summarises additions and replacements and depreciation allowed:

Factories—Reported Additions, Replacements and Depreciation Allowed
(\$ million)

Year	Land and Buildings			Plant and Machinery		
	Additions and Replacements (Excluding Rented)	Depreciation (Excluding Rented)	Book Value, 30 June (Including Rented)	Additions and Replacements (Excluding Rented)	Depreciation (Excluding Rented)	Book Value, 30 June (Including Rented)
1957-58 ..	3.54	1.52	118.91	10.61	6.51	93.72
1958-59 ..	4.53	1.66	123.66	8.70	7.19	96.45
1959-60 ..	21.05	1.77	144.02	17.39	7.70	107.31
1960-61 ..	4.33	1.83	147.10	13.69	8.50	112.63
1961-62 ..	13.93	1.86	159.15	19.16	9.01	121.59
1962-63 ..	4.92	1.91	163.92	24.60	10.19	137.93
1963-64 ..	4.77	2.16	168.40	15.04	11.65	141.65
1964-65 ..	41.35	2.22	209.01	24.62	11.78	155.34
1965-66 ..	4.79	2.45	211.92	17.69	12.09	158.67
1966-67 ..	24.53	2.67	233.98	25.30	12.74	169.16
1967-68 ..	31.22	2.86	263.36	30.13	12.31	184.68

Power Equipment in Factories

General

Since 1936-37, statistics of power equipment in factories relate to the 'rated horsepower' of engines ordinarily in use and engines in reserve or idle, omitting obsolete engines. In addition, particulars of the power equipment of central electric stations are collected in greater detail. Since the central electric stations supply part of their power output to factories and since they are themselves classified as factories, it is necessary to make a clear distinction between engines in the stations and engines in all other types of factory, otherwise duplication may occur. In the following tables, central electric stations have been treated separately from other factories.

Rated Horse-power of Engines in Factories (Other Than Central Electric Stations)

The following table shows the types of engines and motors employed in each class of industry, also the horsepower rating related to each type:

**Factories, Excluding Central Electric Stations—
Types and Power Rating of Engines in Each Class of Industry, 1967-68**

Class of Industry	Rated Horsepower of Engines and Motors Ordinarily in Use—				Rated HP of Engines in Reserve or Idle (excluding Obsolete Engines)
	Steam	Internal Combustion	Motors Driven by Purchased Electricity	Total (a)	
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .. .	..	3,289	21,691	24,980	1,555
II. Bricks, Pottery, Glass, etc. .. .. .	..	..	3,838	3,838	1,116
III. Chemicals, Dyes, etc.	15	2,408	20,541	22,964	4,543
IV. Industrial Metals, Machines, etc. .. .. .	..	4,041	87,930	91,971	21,922
V. Precious Metals, Jewellery, Plate	6	..	128	134	10
VI. Textiles and Textile Goods (not Dress) .. .. .	..	392	11,496	11,888	1,404
VII. Skins and Leather (not Clothing or Footwear) .. .. .	..	..	485	485	15
VIII. Clothing (except Knitted)	8	..	920	928	56
IX. Food, Drink and Tobacco	105	1,130	36,435	37,670	3,548
X. Sawmills, Joinery, Boxes, etc.	634	7,325	50,686	58,645	2,577
XI. Furniture, Bedding, etc. .. .. .	..	..	1,966	1,966	37
XII. Paper, Stationery, Printing, Binding, etc. .. .. .	..	506	116,730	117,236	19,710
XIII. Rubber	1	..	572	573	51
XIV. Musical Instruments, etc. .. .. .	..	..	..	..	..
XV. Miscellaneous Products .. .. .	..	..	436	436	6
Total Classes I to XV	769	19,091	353,854	373,714	56,550
XVI. Heat, Light and Power	6	..	120	126	55
Total All Classes	775	19,091	353,974	373,840	56,605

(a) Excludes motors driven by electricity of own generation.

The total rated horsepower of engines and motors ordinarily in use as shown in the previous table is free from duplication since electric motors driven by power from a factory's own generation are excluded. The same freedom from duplication is not possible in relation to the power rating of reserve engines and motors, the figures shown being simply unadjusted totals of reported capacity. In 1967-68, motors ordinarily in use and driven by electricity were rated 353,974 horsepower using purchased electricity and only 3,206 horsepower using electricity of own generation. As indicated by the previous table, the class with the greatest horsepower rating of electric motors is Class XII, paper making, etc. This does not necessarily imply that Class XII uses most electricity since power is employed industrially for purposes other than the driving of machinery, e.g. for electrolytic processes. In actual fact, Class IV, industrial metals, etc., consumes more electricity than Class XII.

The table that follows summarises the types and power capacity of engines and motors in Tasmanian factories over a ten-year period:

**Factories, Excluding Central Electric Stations—
Types and Power Rating of Engines**

Year	Rated Horsepower of Engines and Motors Ordinarily in Use							Rated HP of Engines in Reserve or Idle (excluding Obsolete Engines) (b)
	Steam		Internal Combustion	Water	Motors Driven by Electricity		Total without Duplication (a)	
	Reciprocating	Turbine			Purchased	Own Generation		
1957-58 ..	1,529	24	9,764	192	238,533	357	250,042	36,268
1963-64 ..	612	..	11,747	..	302,277	281	314,636	46,830
1964-65 ..	547	..	13,112	..	308,521	280	322,180	47,449
1965-66 ..	658	..	10,185	..	319,187	689	330,030	49,419
1966-67 ..	1,010	..	9,625	..	329,461	668	340,096	50,999
1967-68 ..	775	..	19,091	..	353,974	3,206	373,840	56,605

(a) Excludes electric motors driven by power of own generation; includes gas driven engines not specified in table.

(b) Includes all electric motors in reserve.

Central Electric Stations

The generation of hydro-electric power in Tasmania is sufficiently important to warrant detailed treatment in its own right but the Commonwealth uniform definition of factory establishments has classified producers of 'electric light and power' as a sub-class of Class XVI, 'Heat, Light and Power', and therefore a short account of the central electric stations is included at this point. A more detailed description of government electricity generation will be found in the section, 'Hydro-Electric Power', further on in this chapter.

In 1967-68, the horsepower rating (or installed capacity) of generators in the Tasmanian central electric power stations was 1,348,825 horsepower; of this total, 1,292,870 horsepower was associated with turbines driven by water, 42,225 horsepower with internal combustion engines and 13,730 horsepower with steam turbines. In 1967-68, of 21 establishments classed as central electric stations, 19 were government and two private companies. The following table summarises the main power characteristics of the central electric stations (with horsepower equivalents for kilowatt measures):

Central Electric Stations (a)—Power Rating Characteristics of Generators

Description	Unit	1963-64	1964-65	1965-66	1966-67	(b)1967-68
Total Installed Capacity ..	kW	767,990	818,990	819,176	860,710	956,000
	hp	1,078,034	1,149,634	1,150,874	1,212,180	1,348,825
Effective Capacity ..	kW	765,160	816,160	816,290	857,790	953,080
	hp	1,072,970	1,144,570	1,145,740	1,207,030	1,343,680
Maximum Load	kW	576,604	597,044	634,338	631,250	691,658
	hp	800,477	828,870	880,668	876,352	959,310

(a) Not only Hydro-Electric Commission.

(b) The 1967-68 figures include: The gas turbine stations at Bell Bay and Risdon; a diesel station on King Island; and a steam turbine vessel *George H. Evans* at Bell Bay.

Principal Articles Manufactured

The next table lists the principal articles manufactured in Tasmania, irrespective of the sub-class of industry in which production took place. In several cases, however, where there are only one or two producers or where one producer dominates, it is not possible to publish details for articles that are important and would otherwise appear in the table. To give some indication of changes in production, quantity details are given for 1938-39, 1959-60 and 1967-68.

Principal Articles Manufactured—Quantities

Article	Unit	1938-39	1959-60	1967-68	1968-69 ^p
Acid, Sulphuric (100 per cent)	tons	14,158	127,038	182,376	203,212
Aerated Waters	'000 gal	338	1,838	2,646	2,781
Bacon and Ham	'000 lb	1,935	2,562	2,869	3,124
Bran and Pollard	short tons	8,939	13,201	11,031	..
Bread (2 lb loaf equivalents) ..	'000	11,337	27,175	27,356	..
Bricks, Clay	'000	14,541	23,975	26,372	24,773
Butter (a)	tons	4,053	11,744	13,778	15,764
Cadmium, Refined	'000 lb	385	568	577	703
Cases, Fruit	'000	3,143	4,081	1,892	..
Cheese	tons	1,420	328	4,649	5,728
Copper, Blister	tons	n.a.	n.a.	14,062	14,392
Electricity, Total Generated ..	m kWh	567	2,532	3,773	4,738
Fertilisers—					
Sulphate of Ammonia	tons	..	57,601	12,879	39,687
Superphosphate	tons	30,086	102,613	143,662	138,123
Plaster Sheets	sq yd	120,678	778,522	443,825	318,799
Flour	short tons	19,582	30,872	26,408	26,120
Fruit—					
Canned or Bottled—					
Apples, Solid Pack	'000 lb	2,313	16,584	15,566	14,128
Berry Fruits	'000 lb	918	2,944	800	n.p.
Dehydrated and Evaporated					
Apples	'000 lb	762	558	779	657
Bed Bases, Woven Wire	no.	3,386	7,286	8,873	9,279
Paper, Newsprint	tons	..	88,510	92,648	123,935
Structural Steel, Fabricated ..	tons	n.p.	10,154	11,793	..
Tallow	'000 lb	1,694	7,699	10,021	..

Principal Articles Manufactured—continued

Article	Unit	1938-39	1959-60	1967-68	1968-69 ^p
Timber—					
Sawn, Peeled or Sliced (<i>b</i>)—					
Hardwood	'000 sup ft	83,499	164,895	171,972	170,279
Softwood	'000 sup ft	1,529	4,764	3,253	4,400
Dressed—					
Floorboards	'000 sup ft	5,124	29,511	31,478	
Weatherboards	'000 sup ft	1,911	3,743	3,081	
Other	'000 sup ft	1,165	15,979	25,081	
Tyres, Retreaded and Recapped	no.	10,650	81,820	115,668	
Zinc, Refined	tons	69,825	117,893	129,789	148,707

(a) Includes butter equivalent of butter oil.

(b) Includes timber to be further processed.

The articles just listed do not include the following important Tasmanian products: aluminium, automotive engine bearings, carbide, cement, confectionery, welding electrodes, ferro-manganese alloys, hand tools, hard-board, iron ore pellets, particle board, printing, writing and wrapping papers, titanium di-oxide, canned, dehydrated and quick frozen vegetables, wood pulp, woollen manufactures and other textile products. An unusual unlisted product is sodium alginate made from sea kelp. Some articles, although principal manufactures, such as cakes, pastry and pies, wooden furniture and joinery (excluding doors) are not included, as value details only are collected for such items.

The following table shows the factory output of selected foodstuffs for selected years since 1949-50.

Foodstuffs Produced in Factories—Selected Items

Year	Butter (<i>a</i>)	Cheese	Bacon and Ham	Canned or Bottled Fruit		Aerated Waters
				Berry Fruits	Solid Pack Apple (incl. Pie Apple)	
	tons	tons	tons	'000 lb	'000 lb	'000 gal
1949-50	5,069	418	948	2,478	15,699	992
1954-55	8,334	274	992	1,393	8,194	1,127
1959-60	11,744	328	1,120	2,944	16,002	1,838
1960-61	10,258	348	1,100	2,745	8,100	1,904
1961-62	12,063	605	1,112	2,581	14,785	1,942
1962-63	13,097	643	1,182	2,595	8,803	2,130
1963-64	13,667	1,337	1,166	1,416	17,251	2,186
1964-65	13,903	2,350	1,171	1,672	10,494	2,268
1965-66	14,004	2,942	1,062	706	11,657	2,444
1966-67	14,311	3,762	1,242	994	13,120	2,548
1967-68	13,778	4,649	1,284	800	15,566	2,646
1968-69	15,764	5,728	1,394	<i>n.p.</i>	14,128	2,781

(a) Includes butter equivalent of butter oil.

Government Factories

The concept of the factory is not restricted to the private sector of the economy and almost all factory data previously quoted in this chapter have referred to private and government establishments without distinction. Of the

1,797 factories in the 1967-68 collection, 86 were classified as 'government' the term being applied to all levels whether Commonwealth, State, local or semi-government. To give an indication of the various fields of government factory activity, the next table has been compiled showing the number of establishments in the relevant sub-classes:

Number of Government Factories in Sub-Classes, 1967-68

Sub-Class of Industry	Title of Sub-Class	Number of Government Factories
I-4	Lime, Plaster of Paris, Asphalt	2
I-9	Other Cement Goods	3
III-8	Boiling Down, Tallow Refining	2
IV-3	Plant, Equipment and Machinery, including Machine Tools ..	12
IV-4	Other Engineering	4
IV-6	Electrical Machinery, Cables and Apparatus	1
IV-7	Construction and Repair, Tramcars and Railway Rolling Stock	4
IV-10	Motor Vehicles—Repairs	21
IV-33	Other Metal Works	1
V-3	Electroplating (Gold, Silver, Chromium, etc.)	1
IX-5	Bakeries (including Cakes and Pastry)	1
IX-19	Ice and Refrigerating	4
IX-33	Other Food Processing	1
X-4	Joinery	2
X-11	Other Woodworking	1
XI-1	Cabinet and Furniture Making	2
XII-2	Printing, Government	2
XV-4	Brooms and Brushes	1
XV-6	Surgical and Other Scientific Instruments and Appliances ..	2
XVI-1	Electric Light and Power, Government	19
	Total	86

The following table analyses the principal items of factory statistics, showing the government and non-government components of the total.

Government and Non-Government Factories, 1967-68

Particulars	Government Factories	Non-Government Factories	Total
NUMBER			
Factories	86	1,711	1,797
Average Employment (a)—			
Males	2,677	25,873	28,550
Females	64	6,564	6,628
\$'000			
Salaries and Wages Paid (b)—			
Males	7,791	77,538	85,329
Females	92	10,815	10,908
Cost of Materials Used	6,054	197,029	203,084
Other Costs of Manufacture (c) ..	1,770	42,204	43,974
Value of Production	24,237	173,782	198,019
Value of Output	32,062	413,015	445,076
Value at 30 June—			
Land and Buildings	(d) 171,056	92,309	263,364
Plant and Machinery	53,386	131,297	184,683

(a) Average whole year (including working proprietors).

(b) Excludes amounts drawn by working proprietors.

(c) Comprises cost of power, fuel, light, water, lubricating oils, containers, tools replaced and repairs to plant.

(d) Includes value of dams, flumes, earth works, etc. ancillary to production of electricity from water.

Some of the authorities maintaining these establishments are the Hydro-Electric Commission, Postmaster-General's Department, the Transport Commission, the Metropolitan Transport Trust, the various marine boards, local government authorities and the Public Works Department.

In the costing of the output of some Government factories, reliance is placed on internal accounting procedures since, in most cases, the product does not find its way to the open market but may appear as a book-entry between sections of the one department. A good example of this occurs in sub-class IV-10 (Motor Vehicles—Repairs), the situation being that various departments and authorities maintain repair workshops for maintenance of their own vehicles.

INDUSTRIAL GROWTH SINCE 1945

Source of Data

In normal circumstances, the Bureau of Census and Statistics does not publish information relating to any single enterprise or establishment, and regards any information it collects as strictly confidential. It does, however, publish statistical aggregates where they do not reveal the operations of any single informant.

A description of industrial growth without mentioning individual organisations is not very illuminating; therefore the *State Directorate of Industrial Development and Trade* has prepared the following section and accepts responsibility for the information given, while in the section describing 'State Industries' the firms included have provided the information published.

Primary-Secondary Relativity

Prior to World War II, there were few large manufacturing establishments in Tasmania. The economy of the State was dominated by primary industries which, in 1938-39, accounted for 60 per cent of the net value of production of all recorded industries.

By today's criteria, pre-war operations of manufacturing establishments were on a small scale but some enterprises have since emerged as national leaders in particular fields. Despite the limitations of geographical isolation and a relatively small domestic market, the State has been going through a period of important industrial development since World War II; the cessation of hostilities released a world-wide demand for goods and services, and a number of new Tasmanian factories were established to take advantage of the situation.

Post-war expansion of factory activity has made the State an important supplier of manufactured goods and processed materials; the economy is now dominated by *secondary industry* which accounted for 63 per cent of the net value of production of all recorded industries in 1967-68.

Major factories which have been established since the World War II include producers of chemicals, pulp-wood, textiles, process foods and industrial equipment.

The following table which shows the changing primary-secondary relativity since 1938-39, in terms of net value of production indicates some stability in the ratios at present levels.

Net Value of Production: Primary and Secondary Industries Compared

Year	Net Value of Production			Secondary Component as a Proportion of Total
	Primary Industries (a)	Secondary Industries (Factories)	Total	
	\$m	\$m	\$m	per cent
1938-39 ..	16.3	10.8	27.1	40
1945-46 ..	24.2	18.4	42.6	43
1950-51 ..	66.9	49.2	116.2	42
1955-56 ..	87.4	91.9	179.3	51
1960-61 ..	73.6	124.9	198.5	63
1967-68 ..	107.1	198.0	305.1	65

(a) Rural industries and the non-rural group (trapping, forestry, fishing and mining and quarrying).

Tasmania as a Site for Industry

The State has certain advantages which have attracted new industrial enterprises. The principal factors are:

Hydro-Electric Power: This is fully described elsewhere in this chapter and it is therefore sufficient to mention the need of power-intensive industries for cheap bulk electricity (e.g. in metal smelting and refining, heavy chemicals, paper and paper pulp making). The State supply is based on hydro-electric generation, and its capacity is being continuously increased. Rates charged to industrial consumers compare very favourably with those in other Australian systems based principally on thermal generation.

Water Resources: In some parts of the world, water resources are inadequate; shortage of water and the high cost of conservation, re-use and 'purification' have become major problems in the expansion of industry. This is definitely not the situation in Tasmania where water is abundant. The terrain favours the economical construction of high-level storages, while run-of-the-river pumping schemes are feasible at many sites.

Industrial Land, Harbours and Shipping: Cheap land, and its proximity to deep-sea ports, are factors influencing the expansion of industry in the four main centres of population: Hobart, Launceston, Burnie and Devonport.

The associated ports are served by overseas ships and by interstate ships using modern roll-on roll-off and containerised cargo techniques.

Legislation and Government Assistance: The policy of the State Government is to promote the establishment and growth of secondary industries in Tasmania, as provided by the *Industrial Development Act 1954*. This Act is administered by the Director of Industrial Development and Trade under the Minister for Housing, Industrial Development and Sea Fisheries.

The Directorate gives advice, information and assistance on a wide range of important industrial matters, and is empowered to provide financial assistance, including loan guarantees, with the object of helping establish new industries or expanding those in operation.

In common with manufacturers in other Australian States, Tasmanian manufacturers may be granted tariff protection by the Commonwealth, the policy being to assist efficient producers to compete with those in other countries.

Major New Factories Since 1945

The following lists some of the major factories established in the post-war years:

Petersville Australia Ltd (Ulverstone and Devonport): Both Gordon Edgell Pty Ltd and International Cannery Pty Ltd operated in the post-war period to make Tasmania a major producer of processed peas; the two companies now operate as subsidiaries of Petersville Australia Ltd.

Stanley-Titan Pty Ltd (Moonah): This company was incorporated in 1963 and is jointly owned by the Stanley Works, United States of America, and the Titan Manufacturing Company Pty Ltd, (a B.H.P. subsidiary). The Australian member of the new company, Titan Manufacturing Company, commenced operations in Hobart making nails and barbed wire in 1943, diversifying to produce wood chisels in 1945. Stanley-Titan Pty Ltd now produces a wide range of hand tools.

S.T.P. Holdings Ltd: Operations commenced in 1947; the processes include the weaving, dyeing, printing and finishing of silk, nylon, terylene, rayon and cotton. The company is now a subsidiary of Universal Textiles (Australia) Limited.

Australian Titan Products Pty Ltd (Burnie): Production of titanium oxide (rutile) pigments began in 1949; plant capacity has risen from an initial 1,800 tons to 25,000 tons per annum.

Murex Pty Ltd (Derwent Park): Incorporated in 1950, the company manufactures a wide range of welding materials and accessories.

James Nelson (Aust.) Pty Ltd (Launceston): Established in 1951 with 150 looms, the mill has since been expanded to over 330 looms for weaving all types of fabrics from man-made fibres. The company is now a member of the Courtauld's Group.

Tootal of Australia (Devonport): First operations in 1952 used piece-goods imported from the U.K. to make textiles. In 1955, capacity was increased to include the weaving, dyeing and finishing of locally-produced fabrics. More high-speed weaving machines were installed in 1968 and further additions were planned for 1970.

Comalco Aluminium (Bell Bay) Ltd: The production of aluminium commenced in 1955 at a plant erected with Commonwealth Government funds (with the State Government also participating). The present company was formed in 1960 to buy out the Commonwealth's interest. Production capacity has grown from 13,000 to 73,000 tons of primary aluminium per annum: further expansion, expected to be completed in 1971, will increase annual smelting capacity by 21,000 tons.

Comalco Aluminium Powder Pty Ltd: This plant was established at Bell Bay in 1968 to produce aluminium powder and paste.

Tasmanian Scottish Carpet Manufacturing Pty Ltd (E. Devonport): The first piece of Tasmanian carpet was woven in 1961. Capacity was increased with the introduction of a high speed loom in 1967 and expansion is continuing. The finished product is of the Spool Axminster type.

Kraft Foods Ltd (Scottsdale): In 1961, Kraft Foods Ltd acquired Dewcrisp Products Ltd, manufacturers of dehydrated vegetables and frozen and canned peas. A long-range expansion programme commenced with the making of instant mashed potatoes in 1964.

Australian Paper Manufacturers Ltd (Port Huon): Production began in 1963 with an initial capacity of 25,000 tons of pelletised wood pulp per annum; capacity has now been lifted to 75,000 tons. A more detailed account is included elsewhere in this Chapter.

Tasmanian Electro Metallurgical Co. Pty Ltd (Bell Bay): The Broken Hill Co. Pty Ltd established a plant in 1962 to produce high carbon ferro-manganese for the Australian steel industry, with an initial annual output of 26,000 tons. Production capacity is now approximately 75,000 tons of manganese alloys per year.

Algimates (Aust.) Co. (Orford): Operations commenced in 1964, using a special process for extracting sodium alginate from sea kelp. Alginate is a colloid agent, used in film forming, jelling, stabilising, suspending and emulsifying processes. Kelp is obtained from the eastern shoreline in specially designed barges.

Savage River Mines (Pickands Mather and Co. International): The most important industrial project established in recent years commenced operation in 1968. The iron ore pelletising project, including the cost of developing the mine at Savage River and building the pipeline to carry the mineral to Port Latta, cost over \$70m to complete. The production for the first 20 years, which has already been sold, will contribute over \$400m to net export income.

North-West Acid Pty Ltd (Burnie): Established in 1970 to process iron pyrites wastes from the west coast, the plant has an annual production capacity of some 420,000 tons of sulphuric acid.

Repco Bearing Company Pty Ltd (Launceston): In 1949, this company was established to manufacture engine bearings for the Australian automotive spare parts trade. The factory has since expanded and diversified the range of products.

Further Recent Developments

Freighter Industries Ltd (Launceston): A plant to manufacture transport equipment was established in 1970.

Port Huon Fruit Juices Pty Ltd (Hobart): The company, a subsidiary of the Port Huon Fruit Growers' Co-operative Association Limited was formed in 1939. Sales of cider products have expanded in recent years and a new cider factory was completed in 1970.

Clempar Pty Ltd (Cygnet): In 1969 this company established a factory to produce low moisture apple products.

Nylex Ltd (Launceston): Production of agricultural piping and garden hose started in new premises late in 1969.

Four Roses Pty Ltd (Launceston): A new factory opened in 1969 to manufacture a wide range of grocery products.

Other New Products

The two previous sections described some of the factories which have started large-scale manufacturing activities since 1945 as well as other recent developments. The list is by no means exhaustive; other new products which have been added recently to the range of goods manufactured in Tasmania include: bottles, jars and glass containers; domestic electric appliances; fibre-board shipping containers; mattresses; corrugated and solid fibre containers;

multi-wall paper bags; tubes for paper, building and textile industries; hot bitumen and bituminous emulsions; explosives; roofing material; malt products; anhydrous milk fat; casein; long-keeping milk treated by a new ultra-heat process; and corrosion-resistant materials and paint.

Expansion of Established Industries

Growth of long-established industries has played an important part in the expansion of manufacturing activity in Tasmania. Examples are:

Australian Newsprint Mills Ltd (Boyer): The first paper machine, with a 27,000-ton capacity per annum, began operating in 1941; a second machine, installed after the war, increased capacity to 94,000 tons of newsprint per annum; the third machine was commissioned in 1969. The company is now producing 165,000 tons of newsprint annually, providing about 45 per cent of Australia's newsprint requirements and is the nation's sole newsprint producer. A.N.M. Ltd plans to increase annual production by a further 40,000 tons by 1972.

Associated Pulp and Paper Mills Ltd (Burnie): Paper manufacturing capacity has increased from an initial 14,000 tons per annum in 1938 to 110,000 tons at present; the company has become Australia's largest manufacturer of fine papers, and has subsidiaries making specialty papers, hard board and particle board and producing sawn timber. At Wesley Vale, seven miles east of Devonport, the company is constructing a new integrated pulp and paper complex: the first paper machine has been installed and commenced production in late 1970.

Cadbury-Fry-Pascall Australia Ltd (Claremont): In 1921, an association of three British confectioners established their Australian plant at Claremont, near Hobart. Today, the plant is the largest cocoa and chocolate factory in Australia. Following a takeover in 1967, *MacRobertson (Australia) Ltd* is now a subsidiary of Cadbury-Fry-Pascall Australia Ltd. Total staff at Claremont numbers 1,400 and the annual value of output is \$27m, or two-thirds of the total output of the company in Australia.

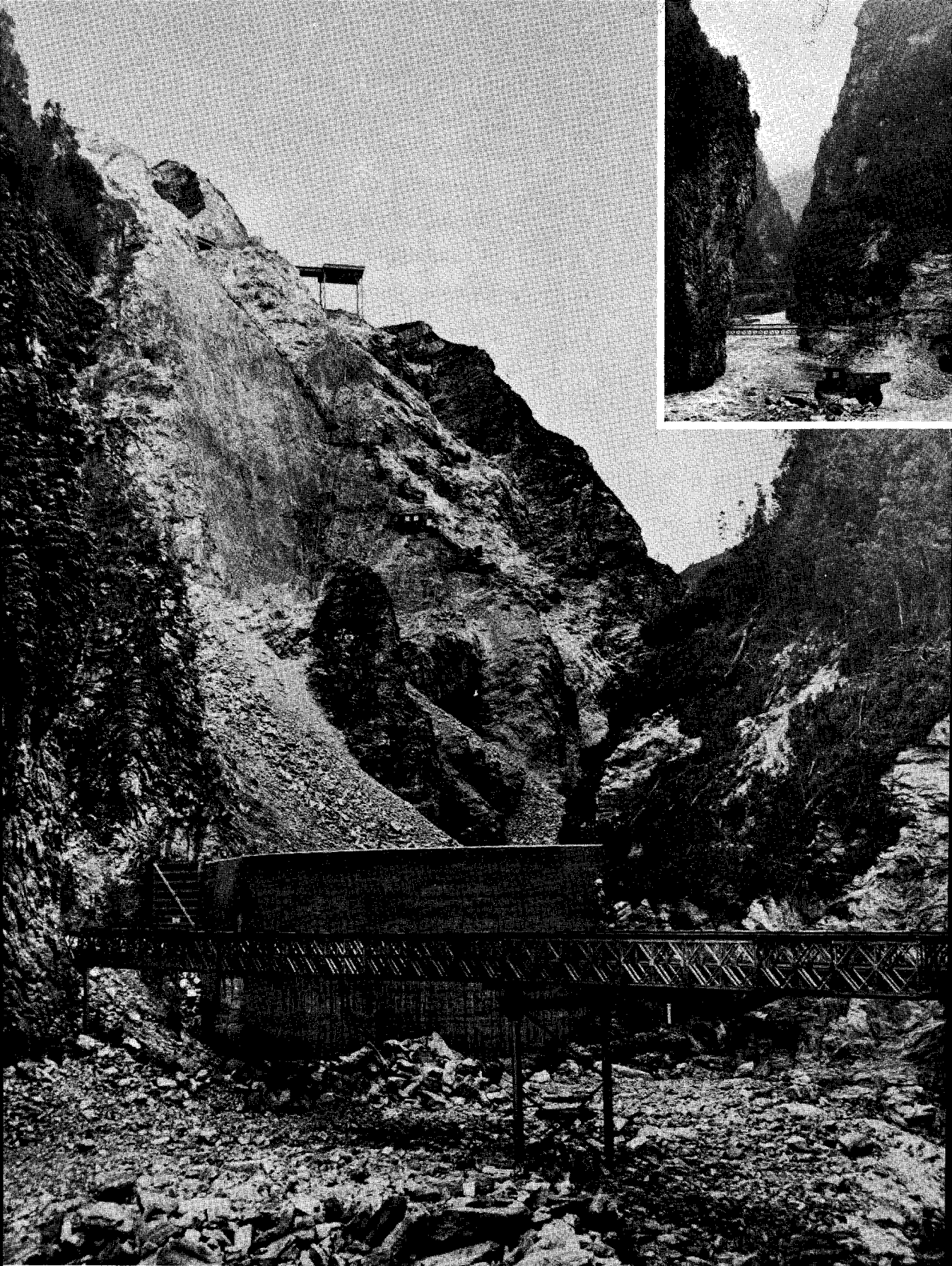
Electrolytic Zinc Company of Asia Ltd (Risdon): Established in 1916, the factory at Risdon is now one of the largest electrolytic zinc plants in the world. Production facilities have been expanded in recent years and the factory now produces zinc and zinc alloys, cadmium, sulphuric acid, superphosphate, sulphate of ammonia and aluminium sulphate. The company is currently carrying out large-scale mine and production plant development.

Superphosphate production increased from 28,000 tons in 1944-45 to 138,123 tons in 1968-69. In 1956, a sulphate of ammonia plant with a 62,000 ton annual capacity was brought into production and, in 1964, a small plant for making aluminium sulphate began operating.

Production of the company's principal metal—refined zinc—has almost doubled since 1944-45, 1968-69 output standing at 148,707 tons. The zinc plant supplies a large proportion of Australia's total requirements. At Risdon, a fluid bed concentrator roaster was commissioned early in 1969. Construction of new plant for zinc smelting, alloying and casting as well as a \$6.3m residue plant, was scheduled for completion during 1970.

A more detailed account of company activities is included elsewhere in this Chapter.

Goliath Portland Cement Company Ltd (Railton): Production of Portland cement approached 44,000 tons in 1944-45. In 1967, a new dry process plant

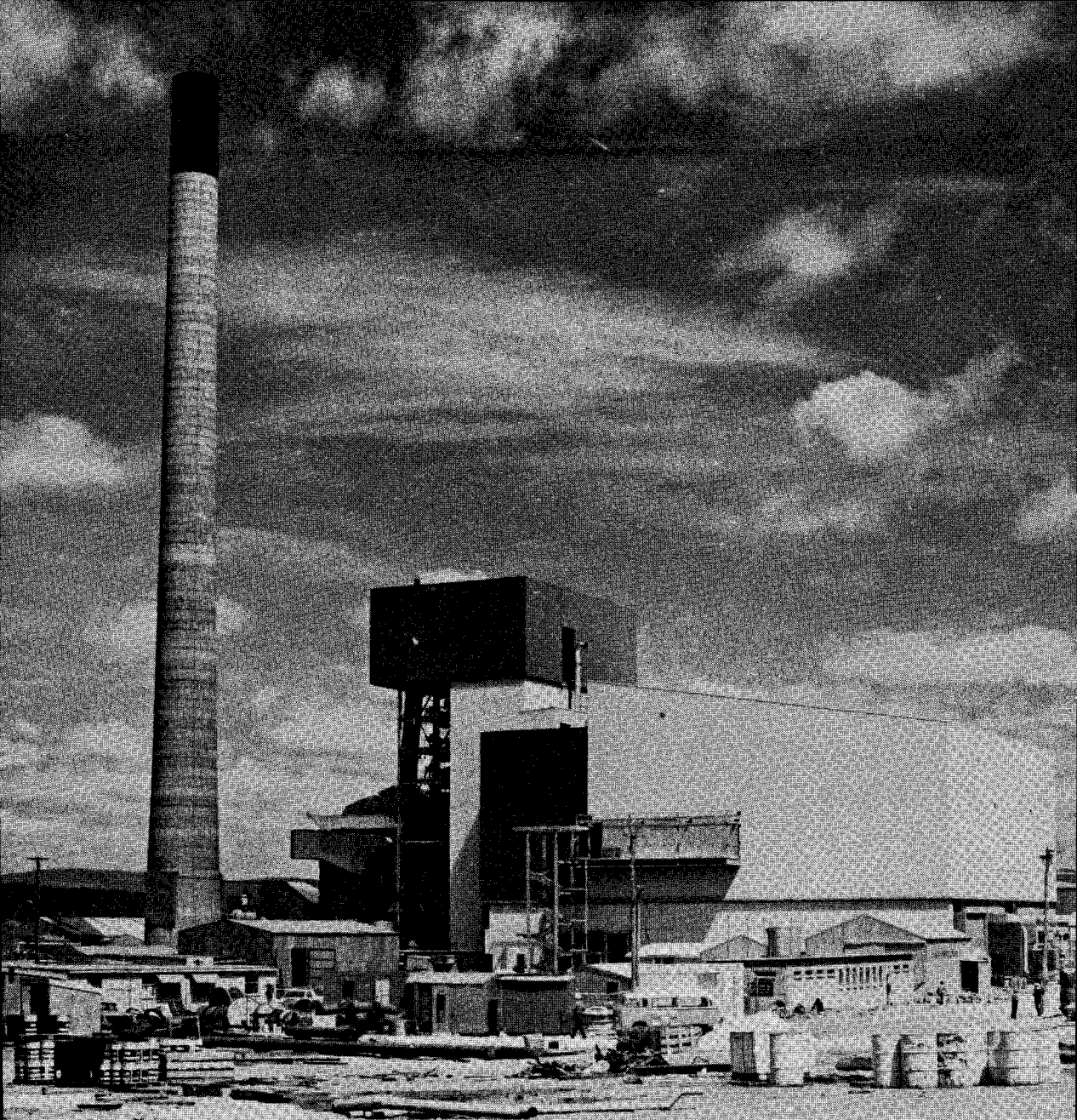


Construction site for the Gordon River Dam, 1970

(H.E.C.)

Inset| Site of dam, 1969

(Mercury)



Thermal power station, Bell Bay

(H.E.C.)



(A.P.M. Ltd)

Forest worker cutting logs into billet length section

Log-loader moving billet length logs

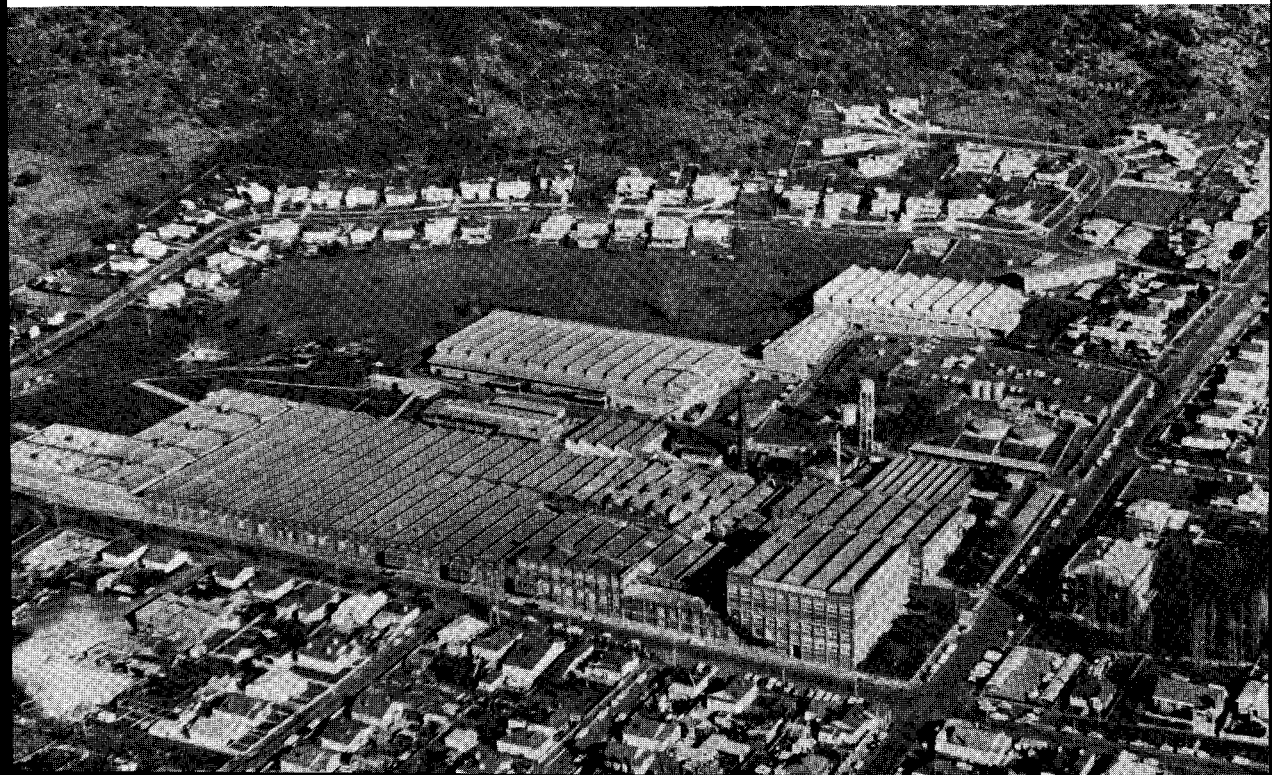
(A.P.M. Ltd)





Associated Pulp and Paper Mills Ltd plant at Wesley Vale near Latrobe

(Examiner)



Coats and Patons knitting wool plant, Launceston

(Examiner)

which cost \$5m came into operation. With an annual capacity of 300,000 tons this unit supplemented the older plant and raised annual output to 500,000 tons. The economical despatch of the product has been facilitated by the installation of bulk handling facilities both at the Railton works and at the port of Devonport. A fully automated cement grinding mill, installed in 1970, is the largest mill in the Australian cement industry. A more detailed account of company activities is included elsewhere in this Chapter.

Kelsall and Kemp (Tas.) Ltd (Launceston): From a small beginning in 1921, the company has become one of Australia's leading producers of high fashion fabrics. Furnishing fabrics have recently been added to its range of products.

Coats Patons (Aust.) Ltd (Launceston): Worsted and woollen hand knitting and machine knitting yarns are spun at this factory which first began yarn-making in 1923. The post-war period saw steady expansion, plant development requiring over \$7m in the last few years. The company established a \$0.75m plant at George Town to produce high quality acrylic yarns for machine knitting. This plant commenced operation at the end of 1967.

A. Wander (Aust.) Pty Ltd (Quoiba): Established in Tasmania in 1941, the Quoiba unit has become one of the largest 'Ovaltine' factories in the world. The factory is equipped to manufacture all types of malt extract to specification, as well as a range of dietetic products.

Current or Planned Projects

The expansion of manufacturing activity described in the previous sections would not be complete without some mention of new projects. This section lists some of the major developments that are in either the planning or the construction stage.

Wood Chip Industry: Tasmanian Pulp and Forest Holdings Pty Ltd is constructing a wood chip plant near Triabunna. Production is expected to commence in 1971.

Associated Pulp and Paper Mills Ltd has announced plans to establish a wood chip plant near Bell Bay with an annual production capacity of 600,000 tons. Overall estimated investment is \$6.4m and construction should be completed in 1972.

A more detailed account of the Tasmanian woodchip industry is contained in Chapter 7.

Tasmanian Containers Pty Ltd (Launceston): A plant is being established at Devonport to manufacture corrugated fibre containers and similar products.

Stanley-Titan Pty Ltd (Moonab): The company intends introducing additional products and expanding production of existing lines.

Besser Vibrapac Masonry (Tas.) Ltd: A major production unit was being constructed at Mornington on Hobart's Eastern Shore to commence operations during 1970. A further plant was being established at Camdale near Burnie.

Frigrite Industries Pty Ltd (Hobart): The first stage of an expansion programme involves the completion, during 1971, of new office and factory accommodation at Cambridge.

STATE INDUSTRIES

The following account of three of Tasmania's larger industrial enterprises has been prepared from information supplied by the companies: Australian Paper Manufacturers Ltd, Port Huon; Electrolytic Zinc Company of A/asia Ltd, Risdon; and Goliath Portland Cement Company Ltd, Railton.

AUSTRALIAN PAPER MANUFACTURERS LTD

History

Australian Paper Manufacturers Ltd is the largest producer of woodpulp, paper and paperboard in Australia, supplying about 75 per cent of Australia's total requirements, in addition to exports to overseas markets. The company's eight mills, located throughout Australia, have a total annual production capacity of 500,000 tons of paper and paperboard.

The company can trace its origins back to 1868 when Samuel Ramsden established Victoria's first paper mill near Princes Bridge, in the City of Melbourne. In 1896, the Australian Paper Mills Co. Pty Ltd was formed in Victoria incorporating mills at Melbourne, Broadford and Geelong. In 1920, this company was merged with Sydney Paper Mills Ltd to form the Australasian Paper and Pulp Co. Ltd. A further series of mergers of Victorian and N.S.W. interests saw the formation and registration in 1926 of the present company, Australian Paper Manufacturers Ltd.

Port Huon, Tasmania

Tasmanian operations are located at Port Huon, 37 miles south-west of Hobart, where neutral sulphite pulp is produced from locally grown eucalypts for shipment to the company's paper and board mills on the Australian mainland. The mill site is of historical significance for it was here, forty years ago, that Australian eucalypts were first successfully pulped on a semi-commercial scale—an achievement which many authorities at that time believed impossible. The foundations of the old pilot plant can still be seen in the mill area.

Australian Paper Manufacturers Ltd became interested in Port Huon as a site for a pulp mill in 1958 when a previous option over the surrounding forest areas lapsed. Detailed investigations were made and subsequent negotiations with the government led to the passing of the *Huon Valley Pulp and Paper Industry Act 1959* which provided for the establishment and operation of the mill. An 80-year agreement allows the annual harvesting of 6.8m cubic feet of pulpwood to a plan which ensures the progressive regeneration and improvement of the forests. Site preparation and construction began in 1961 and production commenced at the end of 1962. Initial production capacity of 25,000 tons per annum has since been increased to 75,000 tons.

The principal advantages of the Port Huon site are the suitability for pulping of the local eucalypts; the deepwater port enabling bulk shipment of the pulp; and the effective disposal of mill effluent via the Huon River. By using radio-active gold to trace tidal movements, company officers and members of the Atomic Energy Commission found that the mill effluent entering the Huon River estuary would be satisfactorily dispersed, even during the worst tidal conditions.

The Hydro-Electric Commission constructed a 235m-gallon dam on Rileys Creek about two miles upstream from Geeveston to ensure an adequate water supply. The Commission also built a new 110 kW power line from Hobart to meet electricity requirements.

Employment

About 75 persons are employed at the mill with a further 120 or so engaged in cutting and carting the pulp wood. Homes for staff have been built by the State Housing Department.

Production Process

The major element in the production process is the digester—a large pressure vessel about 57 ft high and 11 ft in diameter, through which the chips pass continuously. The digester is heated with steam to a temperature of about 350°F and a pressure of 100 lb per square inch (nearly seven times atmospheric pressure) steam required for the process being produced in an oil-fired boiler. Pumps circulate the cooking liquor (a mixture of sodium sulphite and sodium carbonate) through the digester, and as the chips pass downwards the cooking liquor dissolves away the bonding materials between the fibres. At the bottom of the digester a valve allows the cooked chips to be blown under pressure into a receiving vessel, the blow tank.

After the blow tank, the cooked chips pass into a refiner with two grooved discs, one of which rotates against the other, which is stationary. The cooked chips are screw-fed into the centre of the discs and are reduced to pulp as they pass outwards. The refined pulp is then washed free from cooking chemicals by spraying with water as it passes over rotating washing drums.

Water is removed from the washed pulp first by passing it through a hydraulically loaded press, which squeezes out excess water, and second by evaporation in a hot air dryer. An oil burner supplies the hot air, which is fed together with the thickened pulp into a fan and blown along a pipeline to a cyclonic separator. The pulp collects in the separator as a fine fluff. The fluff pulp is screw fed into rotary pellet machines, which form pellets by extrusion through dies having a number of $\frac{1}{2}$ inch holes. The pellets, which are about $\frac{3}{4}$ inch long, are transported half-a-mile to a large storage area beside the mill's deep-sea wharf. From this area the pellets are reclaimed by a large front end loader and loaded directly into the holds of a ship by conveyor belt and chute.

Research

The company actively encourages its staff with study leave and financial assistance to study for higher qualifications. Training may include overseas courses and special assignments or post-graduate and specialised courses within Australia.

The Company has endowed the Forestry Research Fellowship and a Lectureship in Forestry at Melbourne University.

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

History of Risdon Plant

From a small scale plant established at Risdon in 1916, capable of producing 10 tons of zinc daily with a labour force of only 300 men, the Electrolytic Zinc Company has become the major Australian producer of zinc and Tasmania's largest private employer.

Tasmania was chosen as the plant site chiefly because of its low-cost electric power, a necessity if zinc is to be produced by the electrolytic process in competition with zinc produced by distillation. The Risdon site also had the advantages of a deep-water port and access to a labour pool on the north-eastern edge of Hobart.

The Risdon plant was expanded in 1923 to produce 100 tons of zinc per day and since then yearly zinc production has increased from 48,605 tons in 1927 to a present level of more than 170,000 tons. The zinc concentrates used have come chiefly from Broken Hill, New South Wales and Rosebery in Tasmania, with some coming from Mt Isa in Queensland, and for a time from the now idle Lake George Mine, N.S.W.

Demand for high quality zinc for zinc alloy castings grew during World War II and to meet this demand, the Company diversified its zinc product range and produced zinc of the requisite 99.99 per cent purity. The Company was the sole supplier of zinc alloy to Australian die-casting firms from 1946 to the mid 1960s and now supplies about 6,000 tons of alloy per annum for the Australian market.

Production facilities and output have grown rapidly at Risdon; production of refined zinc constitutes two-thirds of the Australian total. Refined zinc and zinc alloys despatched to Australian consumers in 1969-70 was 51,579 tons while a further 120,408 tons were exported to overseas markets, mainly in North America, Western Europe and East Asia.

In addition to zinc and its alloys, the following are also manufactured at Risdon: cadmium, mercury, cobalt oxide, sulphuric acid, superphosphate, sulphate of ammonia and aluminium sulphate. (Sulphuric acid is also produced at Burnie in a joint venture with The Mount Lyell Mining and Railway Company Limited.)

Mining Operations

An issue of shares in 1920 between the Company and Mt Read and Rosebery Mines Limited, a subsidiary of the Mt Lyell Mining and Railway Company, brought the West Coast Hercules and Rosebery mines under Company control. At first high grade zinc ore from the Hercules Mine was roasted, crushed and treated, the impure zinc oxide obtained being shipped, via the port of Strahan, to Risdon for treatment. By 1924, early problems had been solved and operations began at Zeehan where a milling, roasting and concentrating plant had been constructed on the site of the Zeehan Smelters. Zinc concentrate was then roasted and calcine shipped to Risdon, the lead concentrate produced being shipped to Port Pirie where it was treated in the plant of Broken Hill Associated Smelters Pty Ltd. The concentrating mill at Zeehan operated from 1924 until January 1930. During this time 150,000 tons of ore were treated, producing 50,000 tons of lead concentrates and 10,000 tons of zinc concentrates.

In June 1930, a new concentrating mill at Rosebery was virtually complete but low metal prices associated with the world-wide depression caused the cessation of almost all the Company's West Coast operations. It was not until 1936 that work resumed at Rosebery and the concentrating mill, completed more than five years previously, was commissioned. West Coast zinc concentrates were roasted at the Zeehan plant and the calcine railed to Risdon. This continued until 1948. Originally the Rosebery concentration mill produced only lead and zinc concentrates, but in 1943 production of copper concentrate commenced. The lead and copper concentrates are sold to overseas companies for treatment.

In 1964, the Company purchased the North Mt Farrell Mines at Tullah, four and a half miles from Rosebery. These mines produce an essentially silver-lead ore which is of a very high grade.

The Company ore output, approximately 300,000 tons a year, comes from the Rosebery, Hercules and Farrell mines, all within about six miles of Rosebery.

Following the completion (in 1971) of the new Rosebery No. 2 shaft, the yearly output will be doubled. The No. 2 shaft is being sunk to a depth of 1,759 feet. Underground exploration has increased the proven reserves from 1.4m tons in 1927 to an estimated 9.11m tons.

A more detailed coverage of the E.Z. Company's mining operations may be found in the 1970 *Year Book*.

Zinc Production

Concentrates

Ore from the main mine at Rosebery is blended with quantities from the Hercules and Mt Farrell mines before treatment. The blended ore is ground to a fine powder through successive stages of crushing and milling. Separation of the concentrates is achieved by selective flotation, a process in which the ore particles are mixed with water, agitated by paddles and by air bubbled through the pulp. Added chemical reagents cause the particles to stick to the air bubbles and are literally 'floated' off. The lead and copper concentrates are sold and the zinc concentrate, mainly a zinc sulphide, is shipped to Risdon.

Electrolytic Zinc Process

At Risdon, the concentrate undergoes the electrolytic zinc process which consists of four main stages, Roasting, Leaching, Electrolysis and Casting.

Roasting: Broken Hill and Rosebery concentrates are blended at Risdon and roasted in four 'flash' roasting furnaces and a recently commissioned fluid bed roaster. The roasting operation yields two products, impure zinc oxide (calcine) and sulphur dioxide gas. Calcine forms the raw material for the next stage and the sulphur dioxide is used for sulphuric acid production.

Leaching: The calcine and dilute sulphuric acid solution in the form of spent electrolyte from the cells are mixed by agitation with air in tanks called 'pachucas'. The acid dissolves zinc oxide and sundry impurities from the calcine. The resulting pulp is clarified giving undissolved solids and solution. The separated undissolved solids are re-treated to recover further zinc oxide and unroasted zinc sulphide. The remaining solids contain compounds such as zinc and iron ferrite and lead sulphate which are accumulated for further treatment. Based on a new process for recovery of zinc, lead and other valuable metals, a new treatment plant is due for completion during 1971.

The slightly acid solution of impure zinc sulphate is neutralised by addition of some zinc calcine. At the same time air is bubbled through the resultant pulp. Iron, present in ferrous form, is thereby oxidised to the ferric form and all iron precipitates as ferric hydroxide. At the same time other impurities such as arsenic, antimony and silicon are precipitated. The precipitate is removed by filtration. The solution is next treated with zinc dust to precipitate copper and cadmium as a 'metallic sponge', which is further treated to produce cadmium metal and a copper-rich residue for sale. To keep cobalt within acceptable limits, some of it is precipitated from solution and the precipitate treated to produce cobalt oxide.

Electrolysis: The zinc sulphate is now pure enough for electrolysis. During the electrolytic process the metallic zinc is recovered from the purified solution in rectangular lead-lined laminated wooden cells using aluminium cathodes and lead anodes.

Direct current is passed through the solution, the positive zinc ions being attracted to the cathode where zinc is deposited. The negative sulphate ions are attracted to the anode but are unstable and combine with the water of the solution to form sulphuric acid, and oxygen is liberated. The acid solution returns to the leaching step. At intervals of two or three days, the deposited zinc is removed from the aluminium cathodes.

Casting: The cathode zinc sheets are melted in electric furnaces and cast into pure zinc blocks or slabs. Other metals are added to form zinc alloys, depending on the market requirements.

Other Products

Sulphuric Acid

Before the First World War, Australian mineral concentrates had been sold to overseas countries for treatment. As hostilities cut off the traditional metal markets of Western Europe and the demand for non-ferrous metals rose sharply, plants were established in various locations in Australia to roast the concentrates, to provide a local supply of sulphuric acid.

The concentrate furnaces (roasting plants) oxidise the concentrates and sulphur dioxide gas (a basic raw material for manufacture of sulphuric acid) is one of the products. The sulphur dioxide gas is passed through wash towers and electrostatic precipitators to remove acid mist and dust. It is then dried, heated and by the use of catalysts converted to sulphur trioxide. In the last stage of the process it is passed through ceramic ring-packed absorbing towers and absorbed in concentrated sulphuric acid. The resulting acid is standardised at a concentration of 98.6 per cent for use at Risdon or for sale. In 1923, the first sulphuric acid plant was constructed at Risdon, the acid produced being used for fertiliser production. At the other roasting locations acid was produced and also used for fertiliser production, calcine being shipped to Risdon. Between 1940 and 1956, the Company progressively transferred all roasting operations to Risdon. On the completion of the transfer, the ability of the plant to produce sulphuric acid was greatly increased and the sulphuric acid plant was progressively expanded during the period 1949-1970 until a yearly capacity of 250,000 tons was achieved.

North West Acid Pty Ltd, the Company's joint venture at Burnie with the Mt Lyell Mining and Railway Company, commenced operation in 1970. With an output target of 420,000 tons of acid per year, the plant will substantially boost Tasmania's acid production. Australia's dependency on imported sulphur will be reduced by the use of iron pyrites as a raw material. About 75 per cent of acid produced will be piped two and a half miles to storage facilities at the Burnie wharf for shipment to the Australian mainland, while the remainder is railed to Australian Titan Products at Blythe Heads for use in production of titanium pigments.

Superphosphate

Phosphate rock from Nauru, Ocean and Christmas Islands and other sources forms the basis of the superphosphate produced at Risdon. The rock is finely ground and mixed with sulphuric acid, the resulting product being stored for several weeks to allow maturation, after which it is despatched either in bags or in bulk for consumption in Tasmania.

Production commenced at Risdon in 1924, the plant having an annual output of 25,000 tons. This level was maintained until the post-war increase in demand necessitated the extension and replacement of equipment, lifting production to a peak of 164,000 tons in 1966-67.

Sulphate of Ammonia

Investigation into production of the nitrogenous fertiliser, sulphate of ammonia, began in 1943 but it was not until 1956 that plant construction was completed. The plant has a capacity of 60,000 tons a year.

Hydrogen is produced by electrolysis of distilled water with caustic potash as electrolyte and is combined with nitrogen (manufactured by fractional distillation of liquefied air) under pressure and in the presence of a catalyst, to form ammonia. Sulphuric acid is then used to neutralise the ammonia gas producing a saturated solution from which ammonium sulphate crystals are formed and separated. After drying, the crystals are stored in an air-conditioned silo and later sold, either in bags or in bulk.

Trace Element and Mixed Fertilisers

Advances in knowledge of soil requirements and developments in spreading techniques have caused a steadily-increasing demand for trace element fertilisers and mixtures of superphosphate, sulphate of ammonia and potash.

Aluminium Sulphate

Sulphuric acid is also used at Risdon for the manufacture of aluminium sulphate, which is mainly used in paper making and for water purification.

Sundry Products

Pure cadmium metal is produced, in significant quantities, together with small amounts of mercury, cobalt oxide and zinc dust.

The following table gives details of production of major products over the last ten years:

Zinc, Chemicals and Fertiliser Production
(Electrolytic Zinc Company of Australasia Limited—Risdon Plant)
(Tons)

Year	Product			
	Refined Zinc	Sulphuric Acid	Super-phosphate	Sulphate of Ammonia
1960-61	125,937	135,011	104,606	61,586
1961-62	129,069	136,446	117,479	61,335
1962-63	135,204	139,980	125,413	52,433
1963-64	138,611	158,832	132,113	42,819
1964-65	138,779	182,015	130,353	59,812
1965-66	143,912	195,415	159,875	64,106
1966-67	143,916	207,865	163,742	57,499
1967-68	129,789	182,376	144,043	12,879
1968-69	148,707	203,412	138,123	39,687
1969-70 ^p	168,232	238,270	135,140	39,922

Electric Power Development

The supply of cheap bulk electric power was a major factor in attracting the E.Z. Company to Tasmania.

Since the first contract was signed with the Hydro-Electric Commission, the supply, conversion and distribution of electric power has undergone many changes.

Until 1921, the use of power was limited and closely associated with the three 1,250 kilowatt motor generator sets which were used for supplying direct current to the 10-ton per day electrolytic production plant. In 1921 the '100-ton Power Station' was equipped with 3,000 kW rotary converters, each of 6,000 amperes direct current output. This plant required major increase in the amount of power purchased. Continued plant expansion resulted in further increases in power requirements.

In the 1950s the Ammonium Sulphate plant (where electrolytic hydrogen is produced during the process) required a new contract of 22,500 kW. Further contracts have been added since that time. Power savings have been made by replacing all rotary converters which provided direct current for electrolysis with the more efficient semi-conductor (germanium and silicon) rectifiers. Today the Company's contract power demand is 100,000 kW and further electrolysis plant is under construction along with expansion of all other aspects of zinc production plant.

Future Expansion

Risdon is now one of the largest electrolytic zinc plants in the world and through the years there has been a growing diversification of products. A planned \$50m expansion programme to be completed by 1975 will bring further changes in the Company's activities at Risdon and Rosebery as well as at Beltana, S.A., where a new zinc ore-body has been discovered.

The expansion of the West Coast mining complex will double production of zinc, lead and copper concentrates as well as give a production of 150,000 tons of pyrites annually.

The plans for Risdon include a \$6.3m residue treatment plant which will use a process patented by the Company. Similar processes have been patented overseas and in conjunction with Det Norske Zinkkompani of Norway and Compagnie Royale Asturienne des Mines, the Company has licensed several overseas organisations to use the process.

The residue treatment plant will use as its raw material, residue currently produced, together with residue from a stockpile of over 1m tons which has accumulated since the commencement of production at Risdon. The process will increase daily zinc production by 70 tons and will also extract quantities of cadmium and produce a valuable lead and silver bearing product for sale. This further processing will leave a residue of ammonium iron sulphate which will be stockpiled for possible subsequent treatment.

Employee Benefits

Community activities at the Risdon Works were established soon after inception of the plant and are administered by the Electrolytic Zinc Community Council. A similar body covers matters in the Rosebery area. Each council consists of members elected by the employees and others nominated by the Company.

Some of the activities administered include medical services, medicine and dispensary for employees and their wives and families; hospital benefits, in addition to Commonwealth Government payments for employees and dependants; sickness and accident payments; death payment of \$2,000 to the dependants of deceased employees; dental treatment for employees and their families; crib-time stores which operate at a narrow margin of profit; scholar-

ships for children of employees; annual picnic, organised sport facilities, savings bank facilities, holiday homes, etc. The Company also offers employees housing at subsidised rental and pays yearly bonuses based on profitability.

GOLIATH PORTLAND CEMENT COMPANY LTD

History

The manufacture of cement from the extensive limestone deposits in the Railton district commenced in 1926. Initial annual output was 25,000 tons.

In 1928, the Goliath Portland Cement Company Ltd was formed to take over the plant from Tasmanian Cement Pty Ltd; production continued and in 1930, a new kiln with a capacity of 65,000 tons per annum came into operation. Because of expanding sales, annual capacity was increased to 100,000 tons in 1939 and to 200,000 tons in 1956. In 1968, installation of new plant further increased capacity to 350,000 tons per annum, while a new cement mill commenced operations in January 1970 lifting total annual capacity to 500,000 tons.

In 1947, the company opened an asbestos-cement factory which produces a wide range of products for use by the building industry. Present annual output, based on a 40-hour week, is 800,000 square yards of asbestos cement.

In 1960, Goliath Cement Holdings Ltd was formed to acquire all the issued capital of Goliath Portland Cement Company Ltd (although the latter remained as the operating company). Present issued capital is \$6,154,180, the shareholders being predominantly Tasmanian.

Currently the company employs over 260 persons in the cement works with a further 60-70 at the asbestos-cement factory.

Site

The mill complex is built on the actual quarry site from which both limestone and clay are extracted for use in the cement manufacturing process. Ironstone, the other main raw material, is brought by rail from quarries at Penguin, 34 miles away.

The limestone is of a very high grade in that it is particularly free of 'problem compounds'. The present quarry covers four acres and will provide ample supplies for many years. When necessary, extensions could be made as deposits are estimated to be at least 130m tons.

Bulk-loading facilities are located on the site to transport the finished products, by rail and road, to the wharves at Devonport and to Tasmanian markets.

Process

On the floor of the quarry, a crusher reduces the limestone from lumps of up to five feet in size to pieces of approximately one inch or less, at a rate of 300 tons per hour. A conveyor belt then transports the stone to a covered storage area.

The raw materials (limestone, clay and ironstone) are fed into a ball-mill to be ground and blended into a fine powder called 'raw meal'. The ball-mill, 25 feet long and 11 feet in diameter, contains 76 tons of steel balls.

'Raw meal' is then passed through a pre-heater and by the time it reaches the entrance to the kiln, it has increased in temperature to 800°C. Already some of the calcium carbonate in the raw meal has been broken down into calcium oxide and carbon dioxide. As the raw meal passes down the kiln, all the calcium carbonate is broken down, and in the hottest section (about 1,450°C), calcium oxide, silica, alumina and iron oxide combine to form cement compounds known as 'clinker'. The clinker emerges from the kiln at a temperature of over 1,000°C and passes through an air cooler which reduces the temperature to about 80°C.

The cooled clinker then enters the tube mill where it is mixed with about 3 per cent of South Australian gypsum and ground to a fine powder to give the finished product—cement.

The cement is either packed into 'multiwall' paper bags (each holding 94 pounds) or despatched in bulk railway containers. At the Devonport wharf, cement is pumped from rail wagon to storage silo and ultimately into specially equipped ships. The bulk cement shipping facilities, installed in 1967, were the first of their kind in Australia.

GOVERNMENT HYDRO-ELECTRIC POWER

Introduction

Tasmania is unique among Australian States in that until 1970, its electric power system has been based exclusively on hydro-electric installations. In 1970, a thermal oil-fired station commenced operations at Bell Bay opening a new phase in the development of the generating system. Other Australian States rely, in the main, on thermal plants while hydro-electric power, if available, is used only to supplement the basic supply. The Snowy River Hydro-Electric Scheme which feeds power to the Victorian and N.S.W. grids is not designed to cope with the base load demand in these two States, and its essential function is to provide the extra power necessary to meet peak loads, and also to supply irrigation water to the inland. The Tasmanian system, despite its lower installed capacity, produces more power than the Snowy Scheme.

The concentration on water as a source of power in Tasmania has resulted in the need to follow a policy of water conservation, even though the rainfall is usually adequate. Emphasis in the power developments has been on the creation of large storages and multiple use of the impounded waters e.g. water from Lake St Clair may pass through eight power stations before reaching the tidal waters of the Derwent River at New Norfolk.

Early Developments

Duck Reach: Hydro-electric power for public use was introduced in 1895 with the construction of the 450 kW *Duck Reach* station on the South Esk River near Launceston. The station was subsequently enlarged to 2,000 kW, was vested in the Hydro-Electric Commission in 1944 and shut-down when superseded by the *Trevallyn* station in 1955.

Waddamana-Shannon: Tasmania's State-wide hydro-electric power scheme began in 1911 with the exploitation of the waters of the Great Lake catchment and the diversion of the waters of the Ouse and Shannon Rivers. By May 1916, two generators had been put into commission at the 7,000 kW *Waddamana 'A'* station. Further construction work increased Waddamana's capacity. A new dam at Miena on Great Lake was completed in 1922.

Shannon station was opened in 1934 and in 1939 the third element of the scheme, Waddamana 'B' station, commenced generation.

After the completion of the Poatina station in 1964, the Waddamana 'A' and Shannon stations were closed down; the Waddamana 'B' station (48,000 kW) being retained for emergency and peak load generation.

Establishment of Hydro-Electric Commission: In January 1930, the *Hydro-Electric Commission Act* 1929 came into force; the Hydro-Electric Commission was created to manage the existing works and to control the waters of the State. In the Commission was vested the sole right of generating, distributing and selling electricity throughout Tasmania.

Completed Schemes

Full details of the present schemes appear in past *Year Books*; the following section summarises the more important features of these undertakings.

Tarraleah-Butlers Gorge

Commenced in 1934, the early elements of the 90,000 kW *Tarraleah* station first generated power in 1938. Capacity was progressively expanded until completion in 1951. The station draws water via canal from the artificial 0.43m acre feet Lake King William and discharges into the Nive River. The low head, 12,200 kW *Butlers Gorge* station is located at the foot of the Clark Dam.

Tungatinah-Lake Echo

The scheme regulates run-off from the extensive area between Great Lake and Lake St Clair. Bradys Lake is fed with water from the Nive and Ouse, the Ouse diversion first passing through the 32,400 kW *Lake Echo* station opened in 1956. The 125,000 kW *Tungatinah* station, completed in 1953, is fed by water from Bradys Lake and discharges into the Nive River.

Upper Derwent Scheme

The combined waters of the Derwent and its major tributaries—the Nive and Florentine—pass through three stations: 83,700 kW *Liapootah*, 38,250 kW *Wayatinah* and 48,000 kW *Catagunya*.

Lower Derwent Scheme

The three-stage scheme utilises the flow of the Derwent and its tributaries to generate power at the *Meadowbank* (40,000 kW), *Cluny* (17,000 kW) and *Repulse* (28,000 kW) stations. The semi-automatic stations, controlled from *Liapootah*, were opened progressively during 1967 and 1968.

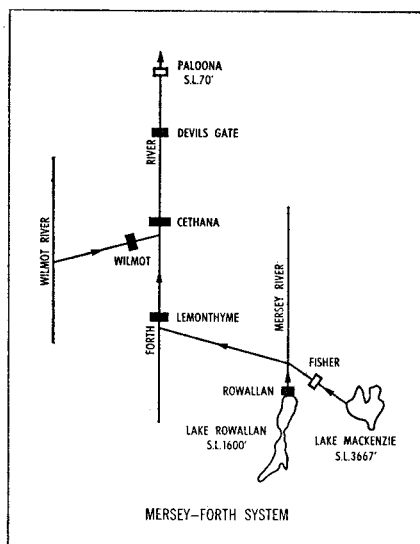
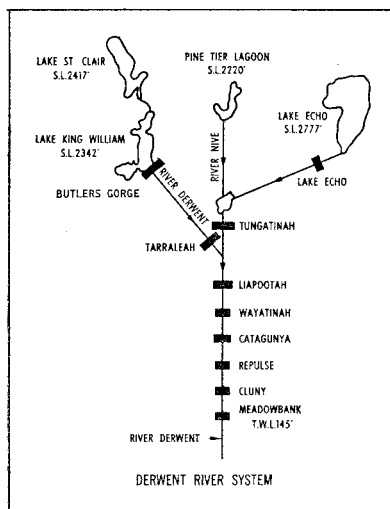
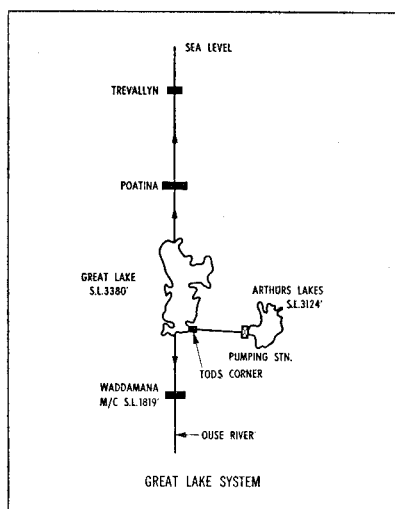
Great Lake-South Esk

The naturally southwards-draining Great Lake was diverted northwards into the South Esk system to make use of the great potential of the 2,700 ft fall from the Central Plateau to the plain of the South Esk. The 250,000 kW underground station at *Poatina* was completed in 1964 and is the largest element in the Tasmanian power generating system.

The tail race of the underground station discharges into the South Esk River, which feeds, via a tunnel, the 'run of the river' *Trevallyn* station (80,000 kW) located at sea level near Launceston.

Bell Bay Thermal Station

An oil-fired thermal power station has recently been constructed at Bell Bay (on the eastern bank of the River Tamar) five miles from George Town: power generation commenced in late 1970. Deep-sea tankers moor at a specially constructed jetty and pump fuel oil directly into the station's oil storage tanks. The first stage consists of a steam turbine driving a single 120,000 kW generator. Provision has been made to add an identical generator at a future date.



Diagrams to illustrate the Great Lake, Derwent and Mersey-Forth hydro electricity generating systems. The black rectangles represent completed power stations; open rectangles indicate stations under construction.

Present Construction

Mersey-Forth Power Development

Construction of the Mersey-Forth power scheme in north-western Tasmania started in 1963 and is due to be completed by 1971. The Fisher, Mersey, Wilmot and Forth rivers are being exploited in combination by a development spread over an area of approximately 800 square miles. It comprises seven power stations, seven large dams and three major tunnels together with associated penstocks, canals and flumes.

Water used in the development falls from an altitude of 3,667 ft in the Great Western Tiers to sea level below the last power station. The seven dams are of widely differing types dictated by variations in topography, geology and flow conditions.

Rowallan and Fisher Storages: There are twin headwaters to the scheme: the Rowallan and Fisher storages.

On the Mersey River, an earth and rock-fill dam has formed Lake Rowallan. This lake is of major importance as it provides the main storage of the development as a whole and regulates the water flow to the down-stream stations. The dam has a centrally placed spillway capable of passing 23,000 cusecs. Water flows first through the *Rowallan* (10,450 kW) station and thence down the Mersey River to the Parangana Dam.

The second high-level storage in the scheme is derived from the development of the Fisher River. A rock-fill dam raises the level of Lake Mackenzie from which water is taken by flume, canal, tunnel and pipeline to the *Fisher* (43,200 kW) station. Tailrace waters discharge into the Fisher River which joins the Mersey River just above the Parangana Dam.

Parangana Dam: The Parangana Dam, an earth and rock-fill structure, diverts waters of the Mersey and Fisher Rivers westwards to the Forth River. From the dam's side-channel spillway (capable of discharging 74,000 cusecs) the flow is conducted by a three-mile tunnel and a penstock to *Lemonthyme* (51,000 kW) station on the Forth River.

Wilmot System: Further downstream, the waters of the Wilmot River are diverted to the east by a rock-fill dam, passing then through a tunnel to the *Wilmot* station (30,600 kW) located on the Forth River above the Cethana Dam.

Forth Valley Stations: The combined flows of all rivers (Fisher, Mersey, Wilmot and Forth) are then used for power generation at three more power stations, all situated in the Forth Valley at the foot of dams at Cethana, Devils Gate and Paloona. *Cethana* station (100,000 kW) is located at the foot of the largest rock-fill dam in Tasmania. More than 2.5m cubic yards of material were needed for the dam, which is 360 ft high and more than 1,000 yards thick at its base. At Devils Gate, the dam is a 260 ft high structure spanning a narrow, precipitous gorge. The 60,000 kW *Devils Gate* station is situated down-stream from the dam, connected by tunnel to the reservoir.

The *Paloona* (28,000 kW) station is almost at sea level on the Forth River. This station will operate on a low head relying on the flow of the river rather than a fall of water to generate electricity.

All seven power stations are designed for fully automatic operation and will be remotely-controlled from a centre near Sheffield.

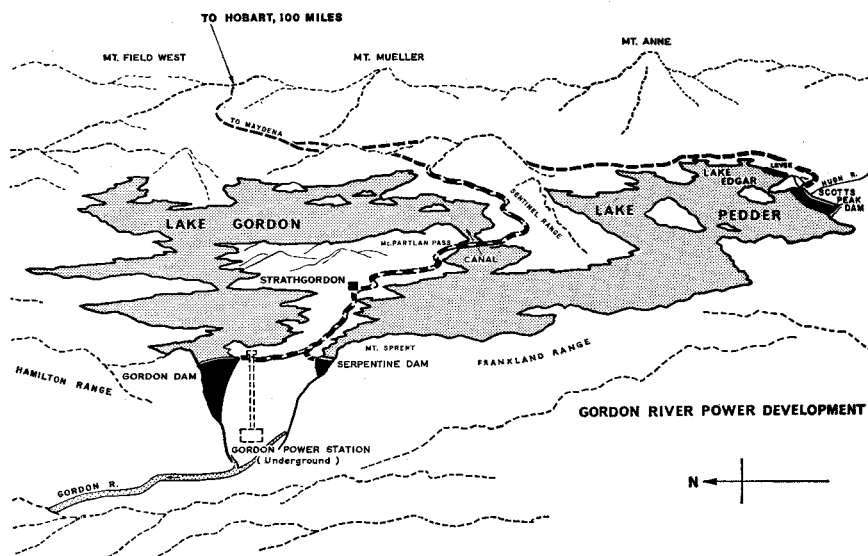
Gordon River Power Development—Stage 1

This development, to be completed by 1975, will create the largest water storage in Australia, having a total useful capacity of 11.8m acre-feet, seven to eight times the size of the Great Lake, and three times the size of Lake Eucumbene, the largest lake in the Snowy Mountains Scheme.

The Lake Gordon storage will be created by a combination of three dams and a levee located on the Gordon and Serpentine Rivers and at Scotts Peak (to prevent over-spill into the Huon River).

Water from the Huon and Serpentine catchments together will flow through a canal at McPartlan Pass into Lake Gordon. Water will then be carried from the Gordon storage by a near vertical shaft to the power station, 610 feet underground. The station will be reached from the top by lift and from the Gordon River Road by tunnel. It is designed to be operated by remote control from Hobart, 100 miles away.

The following diagram shows the essential features of the Gordon River power development.

*Bell Bay Thermal Station—Stage 2*

Following the completion of stage 1 of the Bell Bay thermal station the Hydro-Electric Commission recommended the installation of a second 120,000 kW generating set at the site.

Provision was made in the original design for the additional set. Some facilities namely, the chimney, jetty and wharf, storage tanks, and the water circulation system have sufficient capacity to satisfy the demands of two generator sets.

Certain temporary facilities which are now at the site for construction purposes can be left in place to be utilised during construction of the second stage. It follows that the capital cost of installing the second generating set of 120,000 kW will be substantially less than that of the first stage of construction.

Growth of Hydro-Electric System

The following table shows the growth of the system in recent years:

Hydro-Electric Commission—Operating Statistics

Year	Total Rating of Alternators	Peak Loading	Average Loading	Average (a) Load Factor
	kW	kW	kW	per cent
1958	485,350	394,900	266,660	67.5
1959	485,350	403,600	274,150	67.9
1960	569,050	415,400	285,250	68.7
1961	569,050	438,400	297,080	67.8
1962	617,050	461,600	323,790	70.1
1963	617,050	550,300	378,000	68.7
1964	806,550	582,000	405,620	69.7
1965	807,550	593,700	427,580	72.0
1966	849,150	624,100	451,047	72.3
1967	866,150	636,900	445,490	69.9
1968	940,600	628,000	449,079	71.5
1969	1,051,600	735,500	526,800	71.6

(a) Average loading as a percentage of peak loading.

Average Load Factor

The alternator rating (i.e. generator capacity) is necessarily much higher than the peak loading since some generating plant must be held in reserve against the possibility of break-down.

A power system must be designed to meet both the peak loading (the demand component) and the average loading (the energy component). Peak loading tends to represent high demand for relatively short periods, i.e. it has relatively little energy associated with it. The obvious design and operational problem is to create sufficient capacity to meet peak loading and, at the same time, to encourage the use of power so that the highest possible average loading is obtained. 'Off-peak' heating systems are an obvious example of one way in which the average load factor can be maximised; the steady use of power in a continuous industrial production process also has the effect of raising the average loading and lifting the load factor.

All things being equal, the cheapest system, from the consumers' point of view, will be the one with the highest average load factor. By world standards, the average load factors in the previous table indicate a high standard of design and operational efficiency.

Future Plans

Industrial development in Tasmania is steadily increasing, with a corresponding increase in demand for electricity. However, less than half the State's water power potential has so far been exploited; even by 1975, when current projects are completed, annual output capacity will be only two-thirds of full economic potential.

The integration of thermal power with the previously all-hydro system has begun and will continue, but for some time to come the chief source of energy to be developed in Tasmania will be water power. Preliminary assessments of the Pieman, Franklin and King Rivers indicate that these rivers have considerable potential for power development.

Output and Capacity of Hydro-Electric System

The next table outlines the development of the Tasmanian generating system:

Tasmanian Power Generating System

Station	Year of Completion	Head (in feet)	Generator Capacity (kW) (a)	Average Annual Output (million kWh units)
COMPLETED STATIONS				
Waddamana 'B'	1944	1,127	48,000	(b)
Tarraleah	1938	981	90,000	593
Butlers Gorge	1951	184	12,200	63
Tungatinah	1953	1,005	125,000	560
Trevallyn	1955	415	80,000	541
Lake Echo	1956	568	32,400	76
Wayatinah	1957	203	38,250	274
Liapootah	1960	361	83,700	455
Catagunya	1962	142	48,000	260
Poatina	1964	2,720	250,000	1,322
Tods Corner	1966	136	1,600	13
Meadowbank	1967	95	40,000	209
Cluny	1967	56	17,000	105
Repulse	1968	88	28,000	160
Rowallan	1968	161	10,450	40
Lemonthyme	1969	523	51,000	286
Devils Gate	1969	226	60,000	300
Wilnot	1970	825	30,600	126
Bell Bay	1970	(c)	120,000	788
Cethana	1970	324	100,000	409
Total .. .. .	..	..	1,266,200	6,580
STATIONS UNDER CONSTRUCTION				
Paloona	1971	103	28,000	130
Fisher	1971	2,115	43,200	247
Gordon (Stage 1)	1975	610	240,000	1,333
Total .. .. .	..	..	311,200	1,710
ALL STATIONS				
Grand Total .. .. .	..	..	1,577,400	8,290

(a) Emergency gas turbine generating capacity: 20,000 kW at Bell Bay; 20,000 kW at Macquarie Point (Hobart) not included.

(b) Reserve plant only.

(c) Thermal station.

The Hydro-Electric Commission

The Hydro-Electric Commission is an autonomous statutory authority, responsible almost entirely for the conduct of its own affairs. The 'Minister Administering the Hydro-Electric Commission Act' is answerable to Parliament for the activities of the Commission, but the Commission is not directed by or responsible to the Minister as is a government department. In other words, the Commission is envisaged as a trading or business organisation,

and the purpose of the legislation that created it was to remove it from day-to-day political control. The power exerted by Parliament is mainly financial, not over the ordinary revenue and expenditure of the authority, but over the supply of loan moneys for new capital works.

Two other restrictions on the Commission can be listed: (i) it cannot change its tariff charges for the supply of electricity to consumers except with the approval of the Governor-in-Council; and (ii) in certain of its dealings, such as in real estate, the Commission must obtain the approval of the Minister.

The status of the Commission was described thus by the High Court of Australia in a judgment delivered in 1950: 'In the eye of the law the corporation is its own master and is answerable as fully as any other person or corporation. It is not the Crown and has none of the immunities or privileges of the Crown. Its servants are not civil servants and its property is not Crown property.'

Organisation

Under the Commission, with its full-time Commissioner and three part-time Commissioners, there are five branches:

(i) *Civil Engineering Branch*. Responsible for: survey of water resources; design and construction of all civil works involved in power development and allied projects.

(ii) *Electrical Engineering Branch*. Responsible for: studies of load growth and system development; design and construction of all electrical engineering works in conjunction with the Civil Engineering Branch.

(iii) *Power Branch*. Responsible for: operation and maintenance of completed power developments; generation and transmission of power in bulk.

(iv) *Retail Supply Branch*. Responsible for: distribution of electricity to consumers; operation and maintenance of the distribution system; inspection of installations and equipment.

(v) *Secretarial*. Responsible for: general administrative business of Commission with sub-sections dealing with accounts, law, personnel, transport, stores and purchasing, medical services, central records and other services.

Construction Policy

Apart from its function of meeting all present demands for electrical power, the Commission has the heavy responsibility of estimating probable future demand and of having the necessary capacity to satisfy it as it occurs. In making estimates of future demand for electric power, the Commission must consider four basic factors: (i) growth of population; (ii) technological change favouring greater use of electrical power in homes, factories, shops and offices; (iii) increased demands for power by heavy industrial users e.g. the metallurgical, chemical and paper pulp industries; and (iv) possibility of other 'power-intensive' industries setting up plants in the State.

The difficulty of good planning is accentuated by the fact that hydro-electric development consumes capital far more avidly than the creation of equivalent capacity by thermal generation (put another way, thermal plants are cheaper to build but much more expensive to operate). Prudent economic policy dictates that an authority should try to keep just ahead of demand, and not have an unremunerative investment in a large block of idle generating capacity; the margin in hand at any given time is therefore comparatively small. Construction is a continuous process regulated to ensure that future demand will be met and restrictions in supply avoided.

The decision to introduce an oil-fired thermal unit at Bell Bay into the system was taken because estimated future power demand required a major addition by 1970, even allowing for four Mersey-Forth stations being in operation by that year. During 1970, the Commission was in the process of constructing two major water-power schemes (Mersey-Forth and Gordon Stage One); to meet expected demand in 1970, it could hardly hope to undertake simultaneously a third water-power scheme for, apart from other considerations, the capital cost would be immense.

The alternative was to build a thermal plant and thereby economise on capital outlay. Admittedly the cost per thermally-generated kilowatt hour is higher but, considering 120,000 kW *thermal* capacity against 1,266,200 kW *total* system capacity in 1970, average cost per power unit would not be greatly increased. When the Gordon Stage One becomes operative in 1975, the thermal capacity will constitute only eight per cent of total system capacity (1,577,400 kW) and the higher thermal generating costs will have even less effect.

Technical Details

Generation

The total installed generator capacity of the Commission's 20 power stations is 1,266,200 kW. All stations generate alternating current at a frequency of 50 cycles per second. The power is stepped up at each station, to the voltage required for transmission.

Transmission

Power is conveyed from the power stations by 220,000, 110,000 or 88,000 volts transmission lines to major sub-stations at various load centres. All power stations and major sub-stations are linked into a grid system thereby ensuring a reliable supply to all parts of the State.

Distribution

Power is distributed from the major sub-stations by a network of 22,000 and 11,000 volt feeder lines from which power is stepped down, at distribution sub-stations, to 415/240 volts for supply to individual consumers.

Bruny Island is connected to the main power supply by an undersea cable; King Island is supplied by an internal combustion plant operated by the Commission; Flinders Island is supplied from a generator operated at the district hospital at Whitemark.

Retail Distribution

In the early days of the Commission's operation, consumers of electrical power received it from three sources: from municipalities with their own generating capacity; from municipalities retailing power bought from the Commission; and from the Commission direct. Gradually uniformity was achieved, municipalities stopped generating and retailing and the one authority became the sole supplier, both of bulk power to industry and retail power to homes, shops, businesses, etc. One effect has been uniformity in tariff charges for retail power so that the farmer on the most remote holding is charged no more than dwellers in the principal cities. Tasmania has achieved an Australian record figure for distribution of electrical power—it is estimated that over 98 per cent of homes and farms are now connected. Tariff charges are also the lowest in Australia.

The following table shows comparative average prices for power in the Commonwealth:

Price of Electric Power—Tasmania and Other States, 1968-69 (a)
(Cents per Kilowatt Hour)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Average All Sales (b)
New South Wales	1.95	(c)	(c)	1.92
Victoria	2.09	3.26	1.79	2.15
Queensland	2.19	3.46	1.77	2.26
South Australia	1.65	2.72	1.48	1.83
Western Australia	2.32	2.94	1.73	2.28
Tasmania	1.52	1.92	0.58	0.80
Commonwealth Territories ..	2.02	(c)	(c)	2.36
Commonwealth (Average) ..	1.96	n.a.	n.a.	1.91

(a) Source: 'Statistics of the Electricity Supply Industry in Australia' (published by Electricity Supply Association of Australia).

(b) Includes power for traction, public lighting, etc. not specified in first three columns.

(c) Not recorded separately.

It will be observed that the Tasmanian average is the *lowest* in all types of sale; the householder pays less per unit on the average than his counterpart on the Australian mainland. The economy of hydro-electric generation can be best obtained by comparing the prices charged industrial users.

The following table shows the amount of power sold in the Commonwealth:

Sales of Electric Power—Tasmania and Other States, 1968-69 (a)
(Million Kilowatt Hours)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Total Sales (b)
New South Wales	5,702	(c) 8,402		14,616
Victoria	3,773	1,578	4,090	9,768
Queensland	1,758	713	1,616	4,131
South Australia	1,371	463	1,367	3,224
Western Australia	715	390	557	1,687
Tasmania	752	142	3,221	4,128
Commonwealth Territories ..	275	(c) 381		671
Commonwealth Total	14,346	(c) 22,920		38,226

(a) Source: 'Statistics of the Electricity Supply Industry in Australia' (published by the Electricity Supply Association of Australia).

(b) Includes power for traction, public lighting, etc. not specified in first three columns.

(c) Not recorded separately.

Finances of Hydro-Electric Commission

The table that follows shows the Commission's income and expenditure, and also its total loan debt for the last three years:

Hydro-Electric Commission
Income, Expenditure and Net Loan Debt
(£'000)

Particulars	1966-67	1967-68	1968-69
INCOME			
Sales—Bulk Power	9,952	8,676	12,986
Retail Current	17,976	18,707	20,221
Other Income	371	243	431
Total	28,299	27,626	33,638

Hydro-Electric Commission
Income, Expenditure and Net Loan Debt—continued
(\$'000)

Particulars	1966-67	1967-68	1968-69
EXPENDITURE			
Operation, Distribution, Administration ..	9,589	10,344	11,302
Interest on Loans and Reserves	14,241	15,785	17,679
Less Interest Capitalised	—1,966	—2,508	—2,983
Depreciation Provision	3,196	3,578	4,025
Superannuation Contribution	922	912	999
Other Expenditure	1,076	495	803
Net Profit	1,242	— 980	1,814
Total	28,299	27,626	33,638
NET LOAN DEBT AT 30 JUNE			
Net Loan Indebtedness to State Treasury ..	255,229	272,856	291,029
Other Loans	25,802	36,107	44,956
Total	281,031	308,963	335,985

At 30 June 1969, net loan debt was \$336.0m, the liability to the State Treasury standing at \$291.0m.

Electricity and the Tasmanian Economy

Although Tasmania has only three per cent of the Commonwealth's population, it produces more than ten per cent of Australia's electricity. In the late 1960s, the State's consumption (including both retail and industrial) averaged nearly 11,000 units per head (ranking second only to Norway).

To the end of 1969, capital expenditure on the developments and associated works totalled nearly \$415m. Approximately \$45m is being spent each year on expansion of the system. All annual charges (interest, depreciation, operation, etc.) are borne by the Commission out of its revenues from the sale of electricity. There are no subsidies or other contributions from general State revenues.

Tasmania's prosperity owes a great deal to the development of hydro-electric power. Low-cost electricity has attracted several major industries to the State. Australia's largest producers of zinc and aluminium and the only producers of newsprint, calcium carbide and ferro-manganese, were influenced largely by the existence of plentiful power supplies. In addition, the State is a major producer of tin, pelletised iron ore, fine paper, woollens and textiles, processed foods, cement, titanium oxide, etc. all of which depend on the availability of cheap electric power. The following table gives some indication of the relative importance of Tasmania's commercial and industrial electric power consumption:

Commercial and Industrial Electrical Energy Consumption, 1968-69 (a)

Commonwealth Total (Six States)	Tasmanian Consumption	
	Total	Proportion of Six-State Total
million kWh 22,539	million kWh 3,363	per cent 14.92

(a) Source: 'Statistics of the Electricity Supply Association of Australia'.

Chapter 9

SOCIAL CONDITIONS

HOUSING AND BUILDING

Dwelling Statistics, 1966 Census

General

The following section deals with the number of dwellings in Tasmania at the 1966 Census. For a definition of the Hobart Statistical Division, Urban Hobart and Urban Launceston, see Chapter 5, 'Demography'.

Terms used to describe various classes of dwellings are defined below.

Occupied Dwelling

An occupied dwelling is any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building. The term, therefore, has a very wide reference.

Private Dwellings

Private dwellings are further classified into the following five categories: *Private House*: These include houses used for dwelling purposes and shared private houses for which only one Householder's Schedule was received.

Share of Private House: This is a portion of a shared private house occupied separately and for which a separate Householder's Schedule was furnished.

Flat: This is a part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities.

Sheds, Huts, Garages, etc.: Those used for dwelling purposes.

Other Private Dwellings: These include private dwellings such as rooms, apartments, etc. which are parts of buildings but are not self-contained units.

Other Than Private Dwellings

These include hotels; motels; boarding houses; hostels; educational, religious and charitable institutions; hospitals; defence and penal establishments; police and fire stations; residential clubs; staff barracks and quarters, etc.

Unoccupied Dwellings

These include vacant dwellings available for sale or renting; dwellings such as 'week-ender', 'holiday-home', 'second home', 'seasonal workers' quarters', which were not occupied on the night of the census; dwellings normally occupied but whose usual occupants were temporarily absent on the night of the census; newly completed dwellings whose owners or tenants had not entered into occupation on the night of the census; dwellings described as 'to be demolished', 'condemned', 'deceased estate' and buildings constructed as dwellings but used for non-dwelling purposes on the night of the census. The total of unoccupied dwellings must not be read as the number of vacant houses and flats available for sale or renting.

Dwellings at 1966 Census

The following table shows the classification of occupied dwellings and the number of unoccupied dwellings at the 1966 Census:

Dwellings at Census 30 June 1966

Description	Urban Hobart	Urban Launceston	Rest of State	Total
Occupied Private Dwellings—				
House	27,279	14,692	46,809	88,780
Flat	3,838	1,737	1,461	7,036
Share of House or Flat	241	87	163	491
Shed, Hut, etc.	70	36	776	882
Other	603	197	293	1,093
Total	32,031	16,749	49,502	98,282
Unoccupied Private Dwellings (a)	1,307	808	8,418	10,533
Occupied Non-Private Dwellings—				
Hotels and Motels	80	45	171	296
Boarding House, Guest House, etc. ..	166	71	109	346
Educational, Religious and Charitable Institutions	34	20	34	88
Hospitals	12	4	32	48
Other (b)	48	29	229	306
Total	340	169	575	1,084

(a) Comprises unoccupied private dwellings, classified as houses, flats, sheds, huts, etc. and 'other'.

(b) Includes dwellings described as 'staff barracks' and 'other'.

Nature of Occupancy

The details contained in the next table relate only to occupied private dwellings classified as houses or flats.

**Occupied Private Houses and Flats by Nature of Occupancy
at Census 30 June 1966**

Nature of Occupancy	Urban Hobart	Urban Launceston	Rest of State	Total
Houses—				
Owner (a)	21,589	11,739	33,086	66,414
Tenant—				
Housing Department	2,287	696	1,701	4,684
Other	3,018	2,083	10,252	15,353
Caretaker	139	94	950	1,183
Other (b)	246	80	820	1,146
Total Houses	27,279	14,692	46,809	88,780
Flats—				
Owner (a)	701	304	266	1,271
Tenant—				
Housing Department	372	30	57	459
Other	2,671	1,361	1,069	5,101
Caretaker	52	24	39	115
Other (b)	42	18	30	90
Total Flats	3,838	1,737	1,461	7,036

(a) Owned freehold, on mortgage or under purchase instalment.

(b) Includes those for which nature of occupancy was not stated.

Facilities

At 30 June 1966, 79.2 per cent of occupied private houses had television. The corresponding percentage for occupied private flats was 60.3. In the next table, details of the number of occupied private houses and flats served by electricity and gas are given:

**Occupied Private Houses and Flats by Facilities
at Census 30 June 1966**

Facilities	Urban Hobart	Urban Launceston	Rest of State	Total
HOUSES				
Electricity Only	24,573	10,553	45,279	80,405
Gas Only	9	10	75	94
Electricity and Gas	2,576	4,108	698	7,382
Not Stated Electricity and/or Gas	91	9	187	287
Neither Electricity nor Gas	30	12	570	612
Total	27,279	14,692	46,809	88,780
FLATS				
Electricity Only	3,140	959	1,421	5,520
Gas Only .. .. .	..	5	..	5
Electricity and Gas	662	768	31	1,461
Not Stated Electricity and/or Gas	36	4	7	47
Neither Electricity nor Gas .. .. .	..	1	2	3
Total	3,838	1,737	1,461	7,036

Material of Outer Walls

The next table classifies private houses and flats (occupied and unoccupied) by material of their outer walls:

**Material of Outer Walls of Occupied and Unoccupied
Private Houses and Flats
at Census 30 June 1966 (a)**

Material of Outer Wall	Urban Hobart	Urban Launceston	Rest of State	Total
PRIVATE HOUSES				
Brick	9,744	5,846	5,455	21,045
Stone or Concrete	1,246	530	2,264	4,040
Wood	16,992	8,635	41,313	66,940
Fibro-Cement	226	213	3,481	3,920
Other	33	42	741	816
Total	28,241	15,266	53,254	96,761
PRIVATE FLATS				
Brick	2,556	814	497	3,867
Stone or Concrete	755	186	160	1,101
Wood	791	857	852	2,500
Fibro-Cement	47	34	86	167
Other	6	2	15	23
Total	4,155	1,893	1,610	7,658

(a) Excludes: (i) share of private house or flat; (ii) private dwellings classified as 'sheds, huts, etc.' and 'other'.

Intercensal Estimates of Houses and Flats

It is not possible to prepare a detailed analysis of dwellings between censuses but intercensal estimates of the number of houses and flats by local government areas are prepared. The base for the estimates is the total number of occupied and unoccupied private houses and flats as recorded at the 1966 Census. The Census figures are then adjusted for: (i) demolitions, destroyed by fire, conversions and transfers of houses and flats; (ii) completion of new houses and flats. Transfer of houses between local government areas is merely a redistribution and does not affect total number of houses for the State. Information about demolitions, conversions and transfers is obtained from local government authorities and the Hydro-Electric Commission. The number of new houses and flats completed is available from the quarterly Building Construction collection conducted by the Bureau of Census and Statistics.

Details of the number of houses and flats by local government areas recorded at the 1966 Census and estimated for later years are contained in the following table:

Number of Houses and Flats at 30 June

Local Government Area (Statistical Division in Bold Type)	Houses and Flats			
	Census	Estimated (b)		
	1966 (a)	1967	1968	1969
Hobart (H)	15,352	15,092	15,447	15,700
Glenorchy (H)	10,209	10,524	10,931	11,148
Clarence (H)	8,180	8,348	8,663	9,251
Brighton (SE) (H)	613	598	616	626
Glamorgan (SE)	493	524	543	556
Green Ponds (SE)	269	269	275	278
Richmond (SE)	510	490	507	516
Sorell (SE) (H)	1,294	1,326	1,399	1,457
Spring Bay (SE)	550	564	575	593
Bruny (S)	291	292	290	291
Esperance (S)	1,075	1,076	1,112	1,121
Huon (S)	1,449	1,417	1,460	1,482
Kingborough (S) (H)	3,048	2,658	2,930	3,013
New Norfolk (S) (H)	2,371	2,426	2,516	2,577
Port Cygnet (S)	756	724	750	758
Tasman (S)	499	518	534	552
Hobart (c)	38,918	46,846	48,548	49,919
South Eastern (c)	2,593			
Southern (c)	5,448			
Launceston	11,209	11,244	11,328	11,359
North Central	11,209	11,244	11,328	11,359
Burnie	4,745	4,865	5,135	5,341
Circular Head	1,995	2,061	2,138	2,199
Deloraine	1,482	1,499	1,519	1,541
Devonport	4,650	4,869	5,155	5,394
Kentish	1,424	1,517	1,600	1,621
King Island	721	721	740	750
Latrobe	1,325	1,366	1,409	1,436
Penguin	1,230	1,260	1,279	1,306
Ulverstone	2,881	2,969	3,072	3,150
Wynyard	2,583	2,672	2,783	2,889
North Western	23,036	23,799	24,830	25,627

Number of Houses and Flats at 30 June—*continued*

Local Government Area (Statistical Division in Bold Type;)	Houses and Flats			
	Census	Estimated (b)		
	1966 (a)	1967	1968	1969
Beaconsfield	3,284	3,370	3,473	2,565
Fingal	1,157	1,173	1,179	1,190
Flinders	345	360	371	372
George Town	1,514	1,583	1,624	1,695
Lilydale	1,961	2,004	2,060	2,117
Portland	558	589	625	657
Ringarooma	880	879	883	888
Scottsdale	1,199	1,248	1,269	1,293
North Eastern	10,898	11,206	11,484	11,777
Evandale	471	471	473	475
Longford	1,625	1,623	1,573	1,590
St Leonards	3,605	3,806	r 4,050	4,218
Westbury	1,430	1,461	1,499	1,523
North Midland	7,131	7,360	7,595	7,806
Bothwell	349	345	345	341
Campbell Town	545	544	545	545
Hamilton	1,134	1,146	1,148	1,142
Oatlands	775	777	780	782
Ross	182	182	184	189
Midland	2,985	2,994	3,002	2,999
Gormanston	118	118	119	118
Queenstown	1,093	1,116	1,121	1,127
Strahan	165	167	168	169
Waratah	91	312	392	404
Zeehan	734	748	776	800
Western	2,201	2,461	2,576	2,618
Tasmania	104,419	105,910	109,363	112,105

(a) Comprises only those dwellings classified as private (occupied or unoccupied) houses and flats.

(b) Census figures adjusted for houses completed, demolished, destroyed by fire, transferred between local government areas, etc.

(c) Letter(s) following local government area name indicate Division(s) in which each is situated: H=Hobart, SE=South Eastern, S=Southern; some local government areas (e.g. Brighton) form part of two Statistical Divisions.

Building Statistics

Scope

In the section that follows, building statistics relate exclusively to the erection of new buildings, including major new additions to existing buildings; construction work such as the building of railways, bridges, earthworks, water storages, piers, wharves, etc. is excluded. Minor additions, alterations, renovations and repairs to buildings are also excluded because of the difficulty of obtaining lists of persons who undertake this work.

When a dwelling is attached to a new building, the whole unit, both in regard to number and value, is classified according to the type of new building (e.g. a new shop and dwelling is classified simply as a shop). Figures for flats include 'home units', but not conversions of existing buildings into flats. Number of flats refers to number of new individual dwelling units.

Details obtained from government authorities on their construction programmes and from building contractors refer to all parts of the State. Details for owner-builders cover only those areas subject to building control by local government authorities; thus, some farm buildings are excluded, but this does not materially affect the figures.

Source of Data

The main statistics relate to building approvals and to building operations (commencements, completions, etc.). The data are derived as follows:

Building Approvals: These comprise: (i) approvals by local government authorities for the construction of private buildings; (ii) contracts let and day labour projects commenced by governmental authorities; (iii) private buildings reported by contractors to have been commenced in certain areas of the few rural municipalities where building regulations do not apply to the whole municipality. Details are compiled monthly.

Building Operations: Returns are obtained from (i) building contractors engaged in the erection of new buildings; (ii) owner-builders; (iii) Commonwealth, State, local and semi-government authorities. Statistics are compiled at quarterly intervals.

Definitions

Contract-built: Includes the operations of all building contractors and government authorities which undertake the erection of new buildings.

Owner-built: An 'owner-built' house is one actually erected or being erected by the owner, or under the owner's direction, without the services of a contractor who is responsible for the whole job.

Commenced: A building is regarded as having been commenced when work on the foundations has begun.

Completed: A building is regarded as having been completed when the contractor has fulfilled the terms of the contract.

Both with 'completions' and 'commencements', there is some difficulty in maintaining a uniform classification since the definition of an exact point of time in building operations is involved.

Under Construction: A building is so classified if it is uncompleted at the end of the period, whether or not work on it was actively proceeding at that date.

Values: All values shown exclude the value of land and represent the estimated value of buildings *on completion*. In the case of owner-built dwellings, the owner-builder is required to estimate the value from the cost of the materials and the cost of labour, including his own.

New buildings, including dwellings, with an estimated value on completion of less than \$1,000 are excluded from the tabulations.

Building Approvals

The following tables show details of building approvals; a distinction is made between 'private' and 'government', and the information is dissected to give separate figures for Urban Hobart, Urban Launceston and the remainder of the State. In 1968-69, 44 per cent of the total value of building approvals was attributed to Urban Hobart, 14 per cent to Urban Launceston and 42 per cent to the remainder of the State.

Housing and Building
Building Approvals, 1968-69

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Particulars	Urban Hobart	Urban Launceston	Remainder of State	Total Tasmania
NUMBER				
New Houses—Private	605	292	1,309	2,206
Government	238	12	238	488
Total	843	304	1,547	2,694
VALUE (\$'000)				
New Houses—Private	7,607	3,065	11,620	22,292
Government	1,803	76	1,723	3,602
Other New Buildings (a)—				
Private	6,263	2,439	5,841	14,543
Government	7,107	1,675	3,073	11,855
Alterations and Additions—				
Private	983	368	868	2,219
Government	111	32	68	211
Total Value—Private ..	14,854	5,872	18,328	39,054
Government ..	9,020	1,782	4,865	15,667
Total	23,874	7,655	23,192	54,721

(a) Includes flats.

Building Approvals

Particulars	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
NUMBER						
New Houses—Private	1,929	2,062	1,837	2,500	2,393	2,206
Government	477	607	591	718	916	488
Total	2,406	2,669	2,428	3,218	3,309	2,694
VALUE (\$'000)						
New Houses—Private	11,612	16,452	15,229	21,057	22,212	22,292
Government	2,852	3,756	3,854	4,720	7,870	3,602
Other New Buildings (a)—						
Private	5,920	11,490	19,843	16,154	16,972	14,543
Government	5,584	11,058	7,976	12,022	24,964	11,855
Alterations and Additions—						
Private	1,308	1,666	1,614	1,880	1,942	2,219
Government	316	450	355	179	452	211
Total Value—Private	18,840	29,608	36,686	39,091	41,126	39,054
Govt ..	8,752	15,264	12,185	16,921	33,286	15,667
Total	27,592	44,872	48,870	56,012	74,412	54,721

(a) Includes flats.

Government Construction of Houses: The post-war era was notable for the entry of the State Government into the housing field on a large scale; in November 1945, the Commonwealth Government entered into an agreement with the States whereby it would provide finance for housing projects to be built by the state governments. Under the agreement, Tasmania received \$5,670,000 which it repaid on withdrawing from the scheme in August 1950. The Tasmanian Government nevertheless continued to build houses using the resources available from its own Loan Fund. In 1956, the State Government entered into a new agreement with the Commonwealth, an arrangement renewed with minor modifications in 1961 and 1966. The aggregate advances in Tasmania to 30 June 1969, under the Commonwealth-State Agreements, amounted to \$73,092,000. (Advances under the Commonwealth-State Agreements are additional to State net loan expenditure.)

The following table shows, for Tasmania, the number of new houses completed, and distinguishes between those built for government authorities and those built for private persons:

**Number of New Houses Completed
For Government Authorities and Private Persons**

Year	For Government Authorities	For Private Persons	Total	Year	For Government Authorities	For Private Persons	Total
1953-54	716	1,914	2,630	1961-62	547	1,850	2,397
1954-55	720	1,760	2,480	1962-63	563	1,941	2,504
1955-56	729	1,992	2,721	1963-64	554	1,957	2,511
1956-57	585	2,174	2,759	1964-65	579	2,000	2,579
1957-58	611	1,955	2,566	1965-66	557	1,703	2,260
1958-59	506	2,071	2,577	1966-67	627	2,138	2,765
1959-60	443	2,032	2,475	1967-68	737	2,594	3,331
1960-61	473	2,014	2,487	1968-69	735	1,969	2,704

The proportion of houses built for government authorities has fluctuated between 30 per cent of total houses completed (1950-51) to as low as 18 per cent (1959-60); in 1968-69, the proportion was over 27 per cent. Statistics of houses completed for government authorities do not fully reflect the effect of government policy since the category 'houses built for private persons' includes construction financed, in some cases, by government loans to private persons. Of the \$73,092,000 aggregate advances made in Tasmania to 30 June 1969 under the Commonwealth-State Housing Agreements, 30 per cent represents advances to private persons, either through the mechanism of the Agricultural Bank or the co-operative building societies. Similarly, 'houses built for private persons' includes those built with advances under the Commonwealth's *War Service Homes Act* where the ex-serviceman has obtained the services of a private contractor or operates as an owner-builder.

At the commencement of the year 312 homes were under construction throughout the State. A total of 478 new homes were commenced during the year and 604 homes were completed, leaving 186 under construction at 30 June 1969.

The principal construction authority in Tasmania is the State Housing Department but 'houses built for government authorities' includes construction by, or for, other State and Commonwealth departments.

New Houses Constructed: The next table shows details of number and value of houses commenced, completed and under construction:

Construction of New Houses

Year	Commenced		Completed		Under Construction (a)	
	Number	Value (When Completed)	Number	Value (When Completed)	Number	Value (When Completed)
		\$m		\$m		\$m
1952-53	2,285	10.6	3,314	15.2	2,114	10.6
1953-54	2,665	13.2	2,630	13.5	2,149	11.3
1954-55	2,867	14.6	2,480	12.8	2,536	13.4
1955-56	2,490	13.6	2,721	14.8	2,305	12.8
1956-57	2,591	14.8	2,759	15.7	2,137	12.2
1957-58	2,378	14.5	2,566	15.6	1,949	11.4
1958-59	2,563	15.5	2,577	15.3	1,935	11.8
1959-60	2,357	14.9	2,475	15.5	1,817	11.3
1960-61	2,248	15.1	2,487	16.3	1,578	10.3
1961-62	2,475	16.3	2,397	15.7	1,656	10.7
1962-63	2,442	16.0	2,504	16.5	1,594	10.3
1963-64	2,550	18.4	2,511	17.3	1,633	11.3
1964-65	2,546	19.5	2,579	19.2	1,600	11.6
1965-66	2,202	17.8	2,260	17.8	1,542	11.6
1966-67	2,952	24.6	2,765	22.1	1,729	14.1
1967-68	3,142	27.5	3,331	28.3	1,538	13.3
1968-69	2,580	25.4	2,704	25.5	1,372	12.9

(a) At end of year.

In 1966-67 and 1967-68 the increase in commencements and completions was due, in part, to the replacement of many of the 1,200 dwellings destroyed in the bushfires of February 1967.

Material of Outer Walls: The following table shows the number of new houses completed and their classification according to the material used in their outer walls. Until 1963-64, wood was the predominant material used for outer wall construction. In 1964-65, for the first time, new houses completed with brick veneer walls exceeded those completed with wooden walls and this preference for brick veneer has been maintained.

Number of New Houses Completed Classified by Material of Outer Walls

Materials of Outer Walls	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
Brick, Concrete, etc.—						
Solid	296	174	128	167	131	177
Veneer	378	1 178	1,126	1,159	1,593	1,547
Wood (Weatherboard, etc.) ..	1,807	1,142	932	1,073	1,395	755
Fibro-Cement	96	78	62	354	207	124
Other .. ..	..	7	12	12	5	101
Total	2,577	2,579	2,260	2,765	3,331	2,704

Construction of New Houses and Flats

In the following table, details are given of completions of new houses and new flats:

New Houses and Flats Completed

Particulars	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
NUMBER						
New Houses—						
Government Ownership—						
Contract Built	225	275	309	360	474	447
Day Labour	281	304	248	267	263	288
Private Ownership—						
Contract Built	923	1,200	1,015	1,223	1,705	1,170
Owner Built	1,148	800	688	915	889	799
Total New Houses	2,577	2,579	2,260	2,765	3,331	2,704
New Flats (Individual Units) (a)	131	153	221	185	292	366
Total New Houses and Flats	2,708	2,732	2,481	2,950	3,623	3,070
VALUE (\$'000)						
New Houses	15,298	19,216	17,806	22,063	28,305	25,523
New Flats (Individual Units) (a)	688	844	1,204	1,167	1,773	2,619

(a) Individual dwelling units; conversions of existing dwellings to flats are excluded.

Construction of All New Buildings

The previous tables in this section have been concerned with the construction of new houses, or of new houses and flats. In the five years ended 30 June 1969, the value of houses and flats completed has approximated half of the total value of all new buildings completed in each year. The next table shows the value of all new buildings according to type completed; houses and flats are included to allow comparison.

Value of All New Buildings Completed—Classified According to Type (\$'000)

Type of Building	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
Houses (a)	15,298	19,216	17,806	22,063	28,305	25,523
Flats	688	844	1,204	1,167	1,773	2,619
Hotels, Guest Houses, etc.	170	980	264	1,301	934	1,513
Shops	804	1,216	1,529	835	1,903	1,103
Factories	1,972	2,536	2,218	5,891	9,686	8,722
Offices	1,074	1,246	1,454	2,711	1,409	4,539
Other Business Premises	1,412	2,332	2,731	4,338	2,339	3,019
Educational	2,038	2,586	5,113	2,616	4,572	3,853
Religious	386	308	254	321	178	316
Health	1,380	3,272	4,086	4,103	3,836	2,251
Entertainment and Recreation	286	1,008	666	577	616	507
Miscellaneous	1,392	2,200	2,355	2,293	6,332	2,984
Total All Buildings	26,900	37,744	39,680	48,218	61,881	56,947

(a) Includes estimated value of owner-built houses.

The following table gives details of the total value of all new buildings commenced, completed and under construction. A specification of the items included under 'all new buildings' appears in the previous table.

Value (When Completed) of All New Buildings (a)
(\$m)

Year	Com- menced	Com- pleted	Under Construc- tion (b)	Year	Com- menced	Com- pleted	Under Construc- tion (b)
1959-60	36.5	31.6	31.2	1964-65	42.0	37.7	33.5
1960-61	28.3	34.0	25.9	1965-66	43.8	39.7	37.4
1961-62	35.4	33.5	27.8	1966-67	62.1	48.2	51.3
1962-63	34.6	34.1	28.4	1967-68	63.2	61.9	52.5
1963-64	34.7	34.0	29.1	1968-69	56.2	56.9	51.9

(a) Includes estimated value of owner-built houses.

(b) At end of period.

The State Housing Department

General

The Housing Department was established in July 1953 as a separate authority to administer that portion of the *Homes Act* 1953 which relates to the purchase and development of land for housing, and the erection of homes for rental and sale. Funds for these purposes are made available under the Commonwealth-State Housing Agreement; the funds form part of the State's annual loan borrowings (but are excluded from the State Public Debt). The Department uses both day labour and private contractors and has its own factory which incorporates joinery works, timber mill, plumbing and electrical workshops, etc. Most dwellings constructed are three-bedroom timber units usually roofed with tiles or corrugated iron. Flats for elderly persons and multi-unit flats have also been constructed.

Departmental Construction of Dwellings

During 1968-69, 604 dwellings (houses and individual dwelling units/flats) were completed. The following table shows the aggregate of dwelling units produced by the Housing Department (and by an earlier State housing construction authority) since 1944:

Aggregate of Dwellings Constructed by State Housing Department
From 1944 to 30 June 1969 (a)

Type of Dwelling	Bed- Sitting Room	One Bedroom	Two Bedroom	Three Bedroom	Total
Single Unit—Timber .. ..	..	..	562	8,458	9,020
Other Material .. ..	..	..	..	1,866	1,866
Elderly Persons' Flatettes ..	108	118	..	..	226
Maisonettes .. ..	..	..	12	10	22
Multi-unit Flats (Individual Units) .. ..	..	125	157	14	296
Total Dwelling Units	108	243	731	10,348	11,430

(a) Construction to 30 June 1953 undertaken by Housing Division of State Agricultural Bank; subsequent construction by State Housing Department.

In addition to the above, the Department completed the following dwellings in the years 1967-68 and 1968-69, under the provisions of the *Fire Damage Relief Act* 1967, for the purpose of rehousing fire victims on a tenancy basis:

Dwellings Completed Under Fire Damage Relief Act, 1967

Type of Dwelling	Bed-sitting Room	One Bedroom	Two Bedroom	Three Bedroom	Total
Single Unit—Timber .. ..	..	..	3	15	18
Elderly Persons' Flatettes ..	26	8	..	..	34
Total	26	8	3	15	52

Dwellings for Rental

Flats, maisonettes and elderly persons' homes are for rental only. Although generally houses are allotted on a purchase-contract basis, they may under certain circumstances be rented. The weekly rental of a newly erected three-bedroom timber house in the Hobart metropolitan area approximated \$17.85 in the June quarter 1970. In certain necessitous cases, rental rebates are allowed. Rebates on rentals of elderly persons' flatettes are graduated according to the incomes of the occupiers. Under the current rental rebate formula, a married couple whose only income is the age pension pay \$3.80, while a single person solely dependent on the pension pays \$2.00 a week. (These rates were current in June 1970.)

Dwellings for Sale

Sales are made on a no deposit purchase-contract basis with repayments over a maximum term of 53 years, but buyers are encouraged to pay a deposit if they are in a position to do so. When the agreed purchase price and other charges have been paid, ownership of the property is transferred from the Department to the purchaser. Purchase contracts are sometimes surrendered to the Department; when this happens, any equity which may have been established in the property is forfeited. Purchasers may sell their homes in certain circumstances. The aggregate number of purchase contracts less surrenders entered into by 30 June 1970 was 7,770. The sale price, excluding land, of a new three-bedroom house in the Hobart metropolitan area was approximately \$8,600 in the June quarter 1970. Elsewhere prices tend to be slightly lower.

The weekly repayment instalment for a dwelling is less than the weekly rent of a similar dwelling, because a purchaser is responsible for maintenance.

Amounts outstanding in respect of loans made by the Housing Department by way of purchase contracts are shown in the following table:

Housing Department—Purchase Contracts at 30 June

Particulars	1965	1966	1967	1968	1969
Loans Outstanding—					
Number	5,354	5,781	6,163	6,631	7,099
Value \$'000	34,098	37,452	40,583	44,708	48,940

The interest rate at 30 June 1970 was $5\frac{1}{2}$ per cent, the immediate previous rate being 4.85 per cent. To be eligible for purchase contract terms, an applicant must be married or about to be married, or have dependants for whom it is necessary to provide a home. Date of application, number of dependants, income and existing accommodation are considered in determining applicant's priority.



Goliath-Portland Cement Co. plant and limestone quarry, Railton

(Vern Reid)

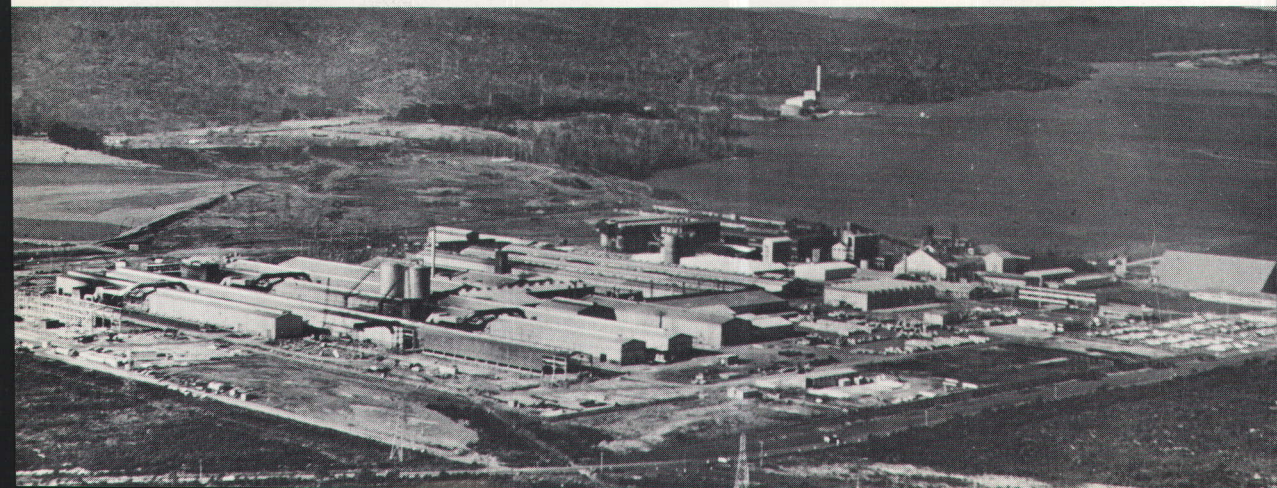


A.P.M. Ltd plant, bulk loading port facilities and Port Huon (left background)

(L. Richards)

Comalco aluminium refinery, Bell Bay and the H.E.C. thermal power station (background)

(Examiner)



Agricultural Bank of Tasmania—Advances to Homebuilders

Housing Function

The Agricultural Bank, as an approved institution under the Commonwealth-State Housing Agreement, receives part of Commonwealth housing funds for advances to home builders. Prior to the commencement of the agreement (1956), the Bank borrowed from the State Loan Fund and from private institutions. To be eligible for a loan, an applicant must be married or about to be married or have dependants for whom it is necessary to provide a home, and be over the age of 21 years; he must also own a block of land. The maximum amount of an advance is \$9,000 for all types of houses, provided that the total advance does not exceed 90 per cent of the Bank's valuation of land and dwelling cost. Advances are repayable by equated instalments over a period of up to 31 years. Advances made since 1 July 1970 have been at 7 per cent, immediately prior to which the rate was 6 per cent.

The following table shows details for recent years:

Agricultural Bank—Advances for Housing (a)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Advances Approved—					
Number	304	214	279	219	338
Value \$'000	2,108	1,479	2,159	1,737	2,708
Advances Outstanding (b) \$'000	12,746	14,086	14,930	16,172	17,697

(a) Excludes advances to building societies.

(b) At end of period.

The Agricultural Bank also acts as agent for the State in the transmission of advances under the Commonwealth-State Housing Agreement to the co-operative building societies; details of such advances and of the building societies appear in Chapter 11, 'Finance'.

Following the bushfire disaster of February 1967, the Bank was required to administer a separate scheme providing finance for home owners who wanted to build homes to their own design. Advances at 30 June 1969 totalled \$311,017.

The Commonwealth Department of Housing

General

The Department has four main functions: (i) to assist certain ex-servicemen to obtain housing with finance made available on a term of up to 45 years at an interest rate of $3\frac{3}{4}$ per cent; (ii) to administer the Homes Savings Grant Scheme; (iii) to advise the Federal Minister on the Commonwealth-State Housing Agreements; and (iv) to advise on the administration of the Housing Loans Insurance Scheme. A further function is to provide and manage self-contained furnished accommodation for migrant families, tenancy being limited to six months.

War Service Homes Loans

Broadly, to be eligible for a loan, an ex-serviceman must have dependants, and must have volunteered for, or had, overseas service. Also, he must not be the owner of a home at the time of seeking a loan. The following table shows details of War Service Homes activities in the provision of finance for Tasmanian housing. Transfers of loans (and of course houses) between borrowers are not shown as expenditure, nor are details given of additional loans advanced for alterations, etc. to homes already subject to War Service Homes finance.

War Service Homes Operations: Homes Financed in Tasmania

Year	Loans Approved (a)	Homes Financed			Expenditure
		Homes Purchased (b)	Homes Built	Mortgages Discharged (c)	
	no.	no.	no.	no.	\$'000
1964-65	232	133	59	24	1,486
1965-66	252	167	35	24	1,562
1966-67	184	107	25	37	1,170
1967-68	187	108	15	47	1,195
1968-69	180	123	13	41	1,350

(a) Loans *approved* are not necessarily paid out in the same year. A transfer from one borrower and a resale to another is included as a loan approved, but not included elsewhere.

(b) New or old existing properties, not previously subject to War Service Homes finance.

(c) Mortgages, raised by individuals to build homes, discharged by the Division on satisfactory completion of the home.

Homes Savings Grant Scheme

The scheme was introduced by the Commonwealth Government in 1964 to encourage young people to save for their first marital home ('young' means under 36 years at the time of signing the contract).

The maximum grant (a gift) is \$500; the actual amount is assessed on the amount saved and the time and rate of saving up to the signing of a contract to build or buy a home. The following table details grants made since inception of the scheme:

Home Savings Grants in Tasmania

Year	Grants Approved for—			Grants Made—	
	Home Purchase	Contractor Construction	Owner Construction	Number	Value
	no.	no.	no.		\$'000
1964-65	396	306	134	813	364
1965-66	341	240	174	760	325
1966-67	395	172	117	684	273
1967-68	458	205	121	784	305
1968-69	442	212	101	755	300

Housing Loans Insurance Scheme

The Housing Loans Insurance Corporation was established under the provisions of the *Housing Loans Insurance Act* 1965 of Federal Parliament. The main purpose of the H.L.I.C. is to assist people to obtain as a single loan and at a reasonable interest rate, the money they need and can afford to borrow to obtain a home suited to their requirements. In Tasmania during 1968-69, 679 loans were insured for a total value of \$5,829,000; in the previous year 1967-68, some 620 loans amounting to \$5,347,000 were insured.

EDUCATION IN TASMANIA

Introduction

This section deals with: (i) education in government and non-government schools; (ii) technical education; (iii) adult education; (iv) university education; and (v) Commonwealth activity in education.

The task of Tasmanian educational authorities, as in other Australian States in the post-war period, has been to provide more schools, more teachers and better facilities; the principal factors exerting pressure have been: (i) a rapidly growing school population; (ii) a change in attitude resulting in increased demand for secondary and tertiary education; (iii) community acceptance of the need for better education in general.

A notable recent change was the 1967 amendment of the *Education Act* 1932; this allowed the State Government to begin making grants to independent (non-government) schools and brought to an end a period of 82 years in which the State accepted no financial responsibility for this type of education. In June 1970, legislation was passed to provide for a five per cent subsidy on building loans raised by independent schools.

Schools, Government and Non-Government

Attendance

Tasmania became, in 1869, the first colony in the British Empire to make it compulsory for a parent to educate his child. In 1898 school attendance was made obligatory between the ages of seven and thirteen, and in 1912, between six and fourteen. In 1946, Tasmania became the only Australian State to make it compulsory for children to attend school until their sixteenth birthday, and government and non-government systems of education were then reorganised to provide a three, four or five-year post-primary course. (The pre-war system of secondary education had comprised two stages, a three-year course followed by a two-year course; with a leaving age of fourteen, and with *selective entry* to government high schools, the proportion of pre-war pupils taking secondary education was very low.)

The following table shows the dual nature of educational responsibility in Tasmania and gives the numbers of pupils in both government and non-government schools, in primary and secondary grades:

Government and Non-Government Schools
Total Pupils Enrolled at 1 August According to Grade of Education

Particulars	1965	1966	1967	1968	1969
Government Schools—					
Primary Grades	48,501	48,759	49,827	50,603	51,658
Secondary Grades	22,378	22,962	23,659	24,765	25,900
Special	736	740	779	741	781
Total	71,615	72,461	74,265	76,109	78,339
Non-Government Schools—					
Primary Grades	8,634	8,621	8,633	8,675	8,381
Secondary Grades	6,054	6,122	6,280	6,272	6,328
Special (a) .. ..	..	..	..	27	31
Total	14,688	14,743	14,913	14,974	14,740
Total All Schools ..	86,303	87,204	89,178	91,083	93,079

(a) Prior to 1968 non-government 'Special School' pupils were included under primary and secondary grades.

The State (or Government) School System

Introduction

The present system had its genesis in the *Education Act* 1885, a department being established, headed by a Director of Education, responsible to a Minister. Under the Act, aid to non-government schools was abolished and only in 1967 was this principle re-introduced (with a system of capitation subsidies).

Education is compulsory between the ages of six and sixteen years although, in some cases, special exemptions may be obtained. Virtually all schools are co-educational. Education is secular and free; parents buy their childrens' books, paints, instruments, etc. Pupils' transport is either provided by the Department or subsidised where daily travel costs on public transport exceed ten cents. The arrangement of transport has been important in the organisation of area, district and high schools where educational facilities are concentrated and centralised, thereby eliminating the smaller country schools.

Present Organisation

Under the Director-General operate three Directors designated (i) primary; (ii) secondary; and (iii) technical. Superintendents are responsible for specific activities and districts; supervisors assist in administration and provide services to schools. Specialist sections deal with curriculum, teaching aids, science equipment, speech education, music, physical education, guidance and welfare, school libraries, educational planning and research, etc.

Expenditure on Education

The following table, using a new method of analysis, is not comparable with those published in previous Year Books. The expenditure is by the State Government but, in the matter of Trust Funds, the State largely acts as agent for the Commonwealth.

Expenditure on Education from Consolidated Revenue, Loan Fund and Trust Funds
(\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
From Consolidated Revenue—					
Teacher Training	963	1,124	1,354	1,614	1,800
Primary Education	5,521	5,867	6,481	7,165	7,857
Secondary Education	5,678	6,080	6,633	7,274	8,809
Tertiary Education—					
Technical (incl. Advanced)	813	946	1,047	1,413	1,712
University	1,360	1,332	1,438	1,637	1,788
Special Schools for Handi- capped Children	1	1	266	248	286
Other	2,877	3,079	3,351	3,764	3,100
Total	17,213	18,429	20,570	23,118	25,351
From Loan Fund (a)—					
Primary Education	1,259	1,011	867	1,268	1,493
Secondary Education	1,239	2,352	936	1,224	1,093
Tertiary Education—					
Technical (incl. Advanced)	113	740	243	290	—81
University	73	143	1,121	295	592
Other	1,369	191	894	1,029	1,280
Total	4,053	4,438	4,061	4,106	4,377
From Trust Funds	923	2,506	2,160	2,560	3,452

(a) Net expenditure.

It should be noted that the preceding table includes amounts voted under other departmental heads for the provision of educational facilities; principally rental and tenancy charges, water, sewerage and rates paid by the Lands and Surveys Department.

The Commonwealth Government has made some contributions to the State loan and trust funds specified in the previous table. The Commonwealth's role in education is described later in this chapter under the heading 'Commonwealth Department of Education and Science'.

The following table gives a dissection of expenditure on education from State Consolidated Revenue:

Expenditure on the Education Department (a) and Non-Government Schools from Consolidated Revenue Fund, 1968-69

Particulars	\$'000
Salaries, Wages and Allowances for Administrative Staff	778
Salaries, Wages and Allowances for Teaching Staff	16,211
Payroll Tax	425
Maintenance of Schools and Other Properties	459
Lighting, Heating, Water and Sanitary Charges	372
Conveyance and Fares of Pupils	1,770
Materials and Equipment (including Schools Library Service)	605
Capitation Grants to Non-Government Schools	199
Grants for Pre-School Child Development	13
Other (including Office Requisites, Rents, Rates, Travelling Expenses, Furniture, Allowances, Free Supplies to Pupils, etc.)	851
Total Expenditure	21,683

(a) Excludes expenditure on Technical and Advanced Education, and the University of Tasmania.

Enrolment

Enrolments in government schools in the last five years were:

**Government Schools
Total Number of Pupils at 1 August According to Sex**

Pupils	1965	1966	1967	1968	1969
Boys	37,306	37,742	38,592	39,624	40,725
Girls	34,309	34,719	35,673	36,485	37,614
Total	71,615	72,461	74,265	76,109	78,339

Age of Pupils in Each Class

The following table summarises the system of government schooling in Tasmania showing the average ages of pupils in each class according to the type of school available, and the final examinations which determine the types of course followed:

Government Schools
Average Age of Pupils, Primary and Secondary, in each Class and Certificates Issued

Primary Schools (including Primary Classes of District and Area Schools)				Secondary Schools (including High Schools and Secondary Classes of District and Area Schools)						
Grade			Mean Age at 1.8.69		Year	Mean Age at 1.8.69		Certificate Issued		
			Years	Months		Years	Months			
Pre-School	..		4	11	1	..	12	10	Preliminary School Certificate	
Kindergarten	..		5	6	2	..	13	10		
1	..	..	6	7	3	..	14	10
2	7	9	4	..	15	9		Higher School Cer- tificate
3	..	..	8	9	5	(a)..	16	9
4	..	..	9	9	6	(a)..	17	7
5	..	..	10	9				
6	11	9						

(a) Secondary years 5 and 6 indicate pupils in their first or second year at Higher School Certificate level.

Number of Primary Schools

The following table shows the number of schools providing primary and pre-school education in the State.

Number of Government Schools Providing Primary Education at 1 August

Type of School	1965	1966	1967	1968	1969
Pre-School	56	56	59	58	58
Primary School	141	138	137	136	140
Area (a)	35	35	35	35	35
District (a)	6	6	7	7	8
Primary with Secondary Classes (a)	14	14	13	10	9
Special School	14	15	16	15	15

(a) These figures are also included in a later table on numbers of secondary schools.

Pre-School Centres

Until 1969, pre-schools were established on the initiative of groups of parents, the Department providing the cost of the building but eventually recovering half its outlay from the parents. Commencing in 1969 all new facilities for pre-school education are being provided in kindergartens attached to primary schools. The Department trains and pays the teachers who control their own programmes; it subsidises or meets most other costs. Pre-school teachers were originally sent for training at Kew in Victoria but, since 1966, courses have been provided at the Hobart Teachers College.

Children from $3\frac{1}{2}$ to $5\frac{1}{2}$ years may attend pre-schools which are considered valuable in personality development and therefore encouraged by the Department. The following table shows the number of teachers and enrolled pupils at the centres:

Pre-Schools—Teachers and Pupils at 1 August

Particulars				1965	1966	1967	1968	1969
Teachers—								
Full-time	..	..	..	55	51	57	66	68
Part-time	..	..	..	..	11	12	4	4
Pupils	..	..	..	2,431	2,447	2,632	2,862	2,635

The high pupil-teacher ratio in the previous table is reduced in practice by attendance of pupils in half-days or on occasional days. Classes do not exceed 25 pupils.

State Primary Schools

State Infants Schools and Infants Classes: Infants schools, and infants classes in all primary schools, cater for children for one, two or three years, depending on facilities available, age at entry, and pre-school experience. Kindergarten classes are provided at some primary schools for children below the age of $5\frac{1}{2}$ who may not have been able to attend pre-school centres.

The following table shows the number of boys and girls in kindergartens and infants classes:

Enrolments in Government Infants Schools and Infants Grades at 1 August 1969

Pupils			Kindergarten	Grade 1	Grade 2	Total
Boys	..	..	1,687	4,824	4,055	10,566
Girls	..	..	1,656	4,197	3,750	9,603
Total	..		3,343	9,021	7,805	20,169

Primary Classes: The majority of government primary schools have six grades only, without kindergartens attached; a few have secondary grades as well. In general, parents may select the school they prefer for their children without restriction, but in some areas, zoning directs children to attend a particular primary school.

Thirty-five area schools and eight district schools have primary grades, and draw many pupils from outlying localities previously served by one or two-teacher schools. Free transport has made this possible and has led to a reduction in the total number of primary schools.

Primary Curriculum: The primary school curriculum has undergone considerable changes in recent years, both in teaching methods and subject matter. The subjects are English (including reading, spelling, oral and written work), history, geography, arithmetic, science, art, music, handiwork, religious and moral education, and health and physical education.

Pupil Grouping: Promotion within the schools is generally by age at the beginning of the school year, with accelerated progress or repetition of classes at the headmaster's discretion; grouping is by ability, where numbers allow, with each child being able to work with his equals in each subject, regardless of chronological age. *Differential teaching* adapts the school programme to meet the widely varying needs and abilities of pupils. The skill subjects of reading, writing, spelling and arithmetic are particularly suited to this method of teaching, testing and grading. One school has experimented widely with *non-grading*, a method of organisation which allows pupils in certain subjects to work at their own level of competence. A few other schools have adopted this organisation in one or two subjects only.

Primary Pupils: The table below shows the age and number of pupils receiving primary education in Tasmanian government schools:

Age and Number of Pupils Receiving Government Primary Education (a) at 1 August

Age Last Birthday (Years)	1965	1966	1967	1968	1969
Under 7	13,256	12,984	13,282	13,368	13,644
7	6,901	7,081	7,153	7,442	7,445
8	6,744	6,926	7,060	7,395	7,633
9	6,766	6,568	6,946	7,098	7,313
10	6,515	6,874	6,682	6,807	7,069
11	5,912	5,953	6,340	6,222	6,400
12	2,105	2,084	2,124	2,088	1,943
13	271	266	219	170	192
14	22	22	19	12	15
15 and Over	9	1	2	1	4
Total—Boys	25,063	25,295	25,827	26,295	26,831
Girls	23,438	23,464	24,000	24,308	24,827
Pupils	48,501	48,759	49,827	50,603	51,658

(a) Includes pupils in pre-schools, infants schools and infants grades.

Special Schools and Special Classes

The Department has special schools, and also special classes in ordinary schools, for children who are physically handicapped, mentally retarded, or otherwise unable to profit from ordinary class teaching. Instruction varies according to the handicap; where it is physical, the main need is to maintain normal or near-normal individual programmes. Many pupils eventually can be transferred to ordinary schools into the grade appropriate for their age.

Schools and classes for slow learners and mentally retarded children follow the curricula for pre-schools and primary schools, and no attempt is made to reach examination standards. The teaching of activities and basic skills is the main concern in these classes, which are to be found in some primary and high schools.

State Secondary Schools

The following table shows the number of government secondary schools in the State:

Number of Government Schools Providing Secondary Education at 1 August

Type of School	1965	1966	1967	1968	1969
Primary with Secondary Classes (a)	14	14	13	10	9
Area (a)	35	35	35	35	35
District (a)	6	6	7	7	8
High	29	29	28	27	27
Matriculation Colleges (b) ..	1	1	2	3	3

(a) These figures are included in a previous table on numbers of primary schools.

(b) In 1965 Hobart High School became Hobart Matriculation College. Matriculation colleges are located in Hobart (2), and Launceston.

Almost all children attend secondary classes, starting at an age varying from 11½ to 13 years. If a choice has to be made between a high and an

area school, a transfer committee considers the matter, taking note of performance in grade VI. High schools are non-selective, comprehensive and, with two exceptions, co-educational.

The differences between the types of secondary school are related mainly to the level of the final examination or certificate available to students. The levels under the recently re-organised system are: School Certificate endorsed Preliminary (three-year course); School Certificate (four-year course); Higher School Certificate (five or six-year course). The School and Higher School Certificates replace the Secondary Schools, Schools Board and Matriculation Certificates which were last awarded in 1968.

The essence of the new system is: (i) all assessment and certification comes under a single authority, a newly constituted Schools Board of Tasmania; (ii) two certificates only are issued; and (iii) the new certificates record achievement in *subjects* and are not *group* certificates as in the old system. The new certificates are:

The School Certificate: awarded in subjects for three and four-year courses; basis of award is by internal assessment and recommendation by schools.

The Higher School Certificate: awarded in subjects studied in fifth or sixth secondary year; basis of award is an external examination conducted by the Board (not the University as for matriculation in the past). The University is still free to determine what constitutes qualification for university entrance and can nominate the subjects and the levels of achievement at the Higher School Certificate examination necessary for entry; the scope of the examination can also be enlarged to cover subjects not designed primarily for purposes of university entrance.

A more detailed account of the new examinations and procedures adopted for awarding the School and Higher School certificates is contained in a later section: *Examinations*.

The following table shows the age and number of students in Tasmanian government secondary schools:

Age and Number of Pupils Receiving Government Secondary Education at 1 August

Age Last Birthday (Years)	1965	1966	1967	1968	1969
11	329	359	433	365	(a) 453
12	3,868	3,853	4,119	4,536	4,457
13	5,702	5,718	5,753	6,140	6,519
14	5,786	5,927	6,111	5,968	6,242
15	4,213	4,336	4,586	4,664	4,950
16	1,734	1,852	1,744	2,070	2,188
17	580	702	681	774	862
18 and Over	166	215	232	248	229
Total—Boys	11,812	11,995	12,294	12,875	13,442
Girls	10,566	10,967	11,365	11,890	12,458
Pupils	22,378	22,962	23,659	24,765	25,900

(a) Includes one boy aged 10 in first year secondary school.

The next table shows the number of secondary pupils by sex and class in all government schools and classes:

Secondary Pupils in Government Schools by Classes at 1 August 1969

Pupils	Secondary Year						Total
	1	2	3	4	5	6	
Boys ..	3,646	3,586	3,041	2,050	616	503	13,442
Girls ..	3,354	3,362	2,937	1,952	555	298	12,458
Total	7,000	6,948	5,978	4,002	1,171	801	25,900

Area Schools

These cater for children following mainly non-academic courses leading to preliminary awards by internal assessment in subjects of the School Certificate after three years. There is a bias towards agriculture, technical subjects and home arts, the aim being to provide training for the environment in which the child is likely to find himself on leaving school. The English course is framed to help children write and speak fluently and mathematics is concerned largely with practical examples. There has been an amount of experimental work in these schools, especially in programmed learning, and mainly in mathematics.

Subjects for the School Certificate are available to pupils in some primary schools with secondary classes, in all area and district schools, and in all high schools.

Government Matriculation Colleges

In 1965, the Hobart High School became the Hobart Matriculation College, no junior students having been enrolled after 1960. The Launceston High School reached this stage in 1967. At these colleges, students are exclusively concerned with Higher School Certificate subjects undertaken as one or two-year courses which in 1969 replaced the Matriculation group certificate courses. The Higher School Certificate is awarded in individual subjects. The third college opened in the Hobart area in 1968, and the elimination of junior students was completed by 1970. A new college is in an advanced stage of planning to serve Hobart's eastern suburbs, construction being planned to commence in August 1971. Students may also matriculate from high schools at Burnie and Devonport. Subsidised transport and hostels assist many students attempting matriculation.

The advantage claimed for matriculation colleges is that they concentrate, in the one centre, teachers who are specialists in this field; further, the students benefit to the extent that the colleges are an intermediate step between the disciplined high school and the university.

Correspondence School

This school offers a wide variety of courses at the primary and post-primary levels, and provides instruction for adults as well as children. Valuable assistance is given to pupils in secondary classes of some primary schools and area schools to assist them achieve School Certificate standard.

The courses available include all primary and most secondary subjects: mathematics, English literature and history at the Higher School Certificate stage; Higher School Certificate level III English for junior temporary assistant teachers; English for New Australians; and courses for adults with special problems such as illiteracy.

Teachers and Teacher Training

There is a variety of courses available to trainee teachers in this State. The University of Tasmania awards the Diploma of Education after one year of a post-graduate course, or the Certificate of Education after a two-year undergraduate course. The Hobart and Launceston teachers colleges provide two-year and three-year courses for primary and infants teachers. For secondary school teachers, the two teachers colleges provide a four-year mathematics and science course; also, the Hobart college provides a three-year commercial course and the Launceston college a two or three-year home arts course. Other teaching courses are at the University (two-year physical education and three-year music), the Tasmanian School of Art, the Hobart Technical College, the Victorian School of Speech Therapy, etc.

With the assistance of the Standing Committee on Teacher Education, a number of important decisions on planning for the future of teacher training were taken in 1969, the significance being to approve the incorporation of the Hobart Teachers College into the Tasmanian College of Advanced Education. A decision was also made to expand provisions for the training of secondary teachers in teachers colleges.

The following table shows the number of teachers in Tasmanian government schools:

Number of Government School Teachers at 1 August 1969 (a)

Type of School	Full-time			Part-time		
	Males	Females	Persons	Males	Females	Persons
Pre-School .. .. .	..	68	68	..	4	4
Special	16	66	82	2	8	10
Primary	252	1,088	1,340	..	126	126
Primary with Secondary Classes ..	12	24	36	3	6	9
Area	152	293	445	13	37	50
District	64	86	150	..	6	6
High (b)	768	575	1,343	13	64	77
Teachers Colleges	36	18	54	32	12	44
Technical Colleges	148	25	173	511	83	594
School of Art	7	1	8	6	9	15
Conservatorium of Music	5	..	5	11	7	18
Total	1,460	2,244	3,704	591	362	953

(a) Excludes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers, and speech education, music and teaching aids centres, etc.) and 73 teachers on leave without pay.

(b) Includes matriculation colleges.

In the primary schools in 1969, 82 per cent of the teachers were women, and the available men usually taught grades V and VI. All subjects are taught by each teacher in these schools, but itinerant teachers, when available, take physical education, music and speech classes on a circuit basis with each teacher being responsible for the teaching of the subject in several schools. In the post-primary schools, most teachers are specialists attached to subject departments within each school. In area and district schools, one teacher may take several subjects, and agriculture, cooking and technical subjects are handled by resident or itinerant specialists as available.

The following table shows the number of teachers and teachers-in-training in Tasmania:

Full-Time Teaching Staff in Government Schools (a) and Teachers-in-Training at 1 August

Type of Teacher	1965	1966	1967	1968	1969
Head Teachers—					
Males	238	236	240	229	232
Females	13	7	9	13	12
Other Teachers—					
Males	1,056	1,063	1,055	r 1,084	1,104
Females	1,942	1,991	2,115	r 2,185	2,237
Monitors (b)—					
Females	17	10	11	..	..
Total Teachers—Males (a)	1,294	1,299	1,295	r 1,313	1,336
Females (a)	1,972	2,088	2,135	r 2,198	2,249
Probationary Students (c)—					
Males	21	..	..	..	..
Females	26	..	..	..	..
Teachers-in-Training—					
Males	258	299	321	344	355
Females	600	614	679	712	773

(a) Includes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers etc.) but excludes those engaged in teacher training and technical education, and part-time teachers.

(b) Appointment of monitors ceased in 1967.

(c) The appointment of probationary students ceased in 1965.

Teachers Colleges, etc.: The institutions where teachers-in-training are studying are shown in the next table:

Teachers-in-Training at 1 August

Institution Attended	1965	1966	1967	1968	1969
MALES					
Hobart Teachers College	32	30	23	36	45
Launceston Teachers College	9	23	28	28	49
University of Tasmania	195	227	244	250	226
School of Art	11	12	13	12	9
Tasmanian Conservatorium of Music	2	5	5	8	5
Other Institutions	9	2	8	10	21
Total	258	299	321	344	355
FEMALES					
Hobart Teachers College	153	133	154	172	212
Launceston Teachers College	150	159	170	186	215
University of Tasmania	233	264	308	312	298
School of Art	28	21	16	17	24
Tasmanian Conservatorium of Music	11	14	17	14	16
Other Institutions	25	23	14	11	8
Total	600	614	679	712	773

Independent (or Non-Government) Schools

Introduction

Non-government schools have long played a valuable part in Tasmanian education. Policies are framed by headmasters in conjunction with their senior staffs and with the approval of their governing bodies or church. There can be freedom to experiment and to develop breadth in courses if desired, and this is shown by the number of subjects available to students.

Registration

Non-government schools and teachers have to conform with the regulations of the *Teachers' and Schools' Registration Board*. This Board consists of nine members who hear and determine all applications for registration and keep a record of all teachers and schools not administered by the Education Department. Every school is graded and teachers are registered in one or more classifications or as special subject teachers. 'Provisional' teachers are those gaining qualifications so they can be registered. The Board may prescribe the mode of classifying teachers, the course of study and training required, the examinations to be passed, and the recognition of overseas qualifications. To secure registration, schools must provide for proper access, drainage, light, ventilation and sanitary conveniences, and inspections may be made by officers appointed by the Board. A daily register of attendance has to be kept.

State Assistance to Non-Government Schools and Pupils

The *Education Act* 1932 was amended in 1967 to provide for direct payments to non-government schools, the amount being calculated on a capitation basis; the subsidies current in 1970 were \$20 per annum per primary pupil; \$30 per annum per secondary pupil up to fourth-year level; and \$50 per annum per pupil at fifth or sixth-year level. The principle of giving no aid to non-government schools was first incorporated in the *Education Act* 1885 and persisted for 82 years. The 1969-70 appropriation was \$362,500. Legislation passed in June 1970 provides for a five per cent subsidy on building loans raised by independent schools.

Apart from these subsidies, benefits include matriculation allowances; secondary scholarships; free or subsidised transport; use of the facilities of the Department's Curriculum, Teaching Aids, Speech Education and Guidance Branches; attendance at trade and domestic science classes if room is available, and attendance by teachers at Departmental schools of method. Equipment can be purchased at favourable rates through the Supply and Tender Department.

Enrolment at Independent Schools

Most non-government school pupils are in schools controlled by religious denominations as the next table shows.

Non-Government Schools
Number of Pupils and Number of Schools at 1 August

Particulars			Church of England	Pres- byterian	Catholic (a)	Seventh Day Adventist	Other Schools	All Schools
NUMBER OF PUPILS								
1965	..	Boys	980	303	5,040	74	646	7,043
		Girls	863	324	5,465	70	923	7,645
1966	..	Boys	1,004	273	5,063	63	680	7,083
		Girls	839	314	5,529	65	913	7,660
1967	..	Boys	1,050	314	5,105	70	697	7,236
		Girls	840	324	5,578	55	880	7,677
1968	..	Boys	1,029	335	5,061	74	748	7,247
		Girls	860	303	5,539	70	955	7,727
1969	..	Boys	1,003	303	4,998	80	770	7,124
		Girls	325	329	5,446	75	941	7,616
NUMBER OF SCHOOLS								
1969	..	..	4	2	50	4	7	67

(a) Includes one 'Special School'.

Of the 29 schools in 1969 which catered for secondary pupils, 18 had higher school certificate classes. They have a tradition of comprehensive type schooling, but increased applications for entry have imposed some element of selectivity such as an entrance examination. Preference is usually given to children of past pupils or brothers and sisters of current pupils.

The following tables give details of pupils enrolled at non-government schools; 31 pupils (all girls) enrolled at the one *special school* in 1969 have been excluded. For years prior to 1968 these pupils were included with primary and secondary grade pupils; the number of pupils (all girls) involved was: 1965, 17; 1966, 30; 1967, 19; 1968, 27.

Most independent school pupils are to be found in primary classes, and most of these are in Catholic schools. The following table shows the ages and numbers of all pupils in non-government primary classes and sub-primary classes:

Age and Number of Pupils Receiving Non-Government Primary Education at 1 August

Age Last Birthday (Years)	1965	1966	1967	1968 (a)	1969 (a)
Under 7	1,962	1,905	2,182	2,293	2,182
7	1,246	1,191	1,229	1,201	1,193
8	1,180	1,189	1,182	1,184	1,128
9	1,212	1,202	1,172	1,201	1,163
10	1,115	1,214	1,214	1,217	1,170
11	1,142	1,104	1,176	1,112	1,047
12	567	556	399	394	396
13	177	210	60	62	93
14	30	37	13	9	8
15 and Over	3	13	6	2	1
Total—Boys	4,232	4,159	4,194	4,161	4,051
Girls	4,402	4,462	4,439	4,514	4,330
Pupils	8,634	8,621	8,633	8,675	8,381

(a) Excludes the primary grade elements of 27 special school pupils in 1968 and 31 in 1969.

The following table shows the age of pupils in the independent schools at secondary level:

**Age and Number of Pupils Receiving
Non-Government Secondary Education at 1 August**

Age Last Birthday (Years)	1965	1966	1967	1968 (a)	1969 (a)
11	100	95	129	160	(b) 158
12	804	887	915	1,039	1,040
13	1,226	1,253	1,306	1,256	1,255
14	1,273	1,317	1,385	1,275	1,284
15	1,280	1,196	1,216	1,252	1,177
16	838	871	835	792	905
17	406	394	404	387	410
18 and Over	127	109	90	111	99
Total—Boys	2,811	2,924	3,042	3,086	3,073
Girls	3,243	3,198	3,238	3,186	3,255
Pupils	6,054	6,122	6,280	6,272	6,328

(a) Excludes the secondary grade elements of 27 special school pupils in 1968 and 31 in 1969.

(b) Includes one ten-year old boy.

The following table shows the number of secondary pupils by sex and class in all non-government schools:

Secondary Pupils in Non-Government Schools by Year at 1 August 1968

Pupils	Secondary Year						Total
	1	2	3	4	5	6	
Boys ..	617	708	592	624	316	216	3,073
Girls ..	773	696	714	621	311	140	3,255
Total	1,390	1,404	1,306	1,245	627	356	6,328

Other Education Matters

Various functions of the Education Department are described in the following section; some of which are applicable to both government and non-government schools.

Equipment: The Department maintains an active interest in the development of teaching methods and of teaching aids. The Teaching Aids Centre gives assistance to schools by the provision of a library of 16mm films, film strips and coloured slides. Records are distributed on loan, and are mainly used for music appreciation, poetry and languages. Printed aids, mainly in the form of charts and booklets, are provided (e.g. charts for cursive writing and booklets for the Cuisenaire system). Audio-visual aids (tape recorders, film projectors, centralised radio systems, strip and sound projectors, television receivers, etc.) are bought by the Centre and re-sold to the schools with a \$ for \$ subsidy given by the Department. Repair and maintenance of this equipment is done free of charge by the Centre. Specialised electronic equipment has been developed and produced, e.g. auditory training equipment for the schools for the deaf. A talks studio with recording equipment and tape duplicating facilities operates to prepare language laboratory programmes and the recording of schools broadcasts.

A number of students books are produced for sale to schools by both the Education Department and the A.B.C.

Libraries: These have been built up in most schools, with Departmental subsidies matching local funds up to levels determined by the size of the school. A new Central Library Service Branch offers bibliographic and technical advice to schools on library development. The library service in conjunction with the Curriculum Branch, exercises control over comprehensive book and resource material displays.

Television and Radio Programmes: Receivers are found in all schools; lessons are frequently co-ordinated with the scheduled programmes arranged by liaison between the Department and the Australian Broadcasting Commission.

A more detailed account of these programmes is located at the end of the 'Education' section of this chapter.

Road Safety Officers: Transport Commission officers visit the schools regularly to give lectures and practical demonstrations. Special efforts have been made to increase the safety of child cyclists, and warnings have also been given on firearms, explosives, dangerous drugs, etc. Driver education courses are given in two schools, a type of training likely to be extended.

Parents and Friends Associations: While a major function of these bodies is fund-raising for the provision of subsidised equipment and library books, they also act as a valuable forum for discussion on education.

Migrant Education: This is arranged by the Department at certain schools or by combined radio-correspondence lessons, the aim being the teaching of English. The cost of migrant education is reimbursed by the Commonwealth Government.

The School Milk Scheme: Free milk is available to all children under 13 years attending government and non-government primary and infants schools, pre-school centres, creches, child-minding centres and orphanages. One-third of a pint of milk is supplied daily, the cost being born by the Commonwealth. In 1969, the cost of milk supplied was \$492,461.

Bursaries: A system of bursaries exists to assist pupils in post-primary government and non-government schools. Junior bursaries, which may be held for four years, are awarded to pupils under the age of 13 who live in areas where the required type of secondary education is not available. Senior bursaries are awarded on the results of a competitive examination for pupils under 17.

There were 94 junior bursaries held during 1969, at a cost to the Bursaries Board of \$11,794. Eleven junior bursaries were awarded for 1970. The Bursaries Board fund is made up of moneys from the Government and private donations.

Allowances are paid to all pupils in fourth, fifth and sixth years of post-primary education if parents' income does not exceed \$50 per week (subject to variation if there are additional children).

Technical Education

Government technical colleges operate at Hobart, Launceston, Devonport and Burnie and provide professional, technical and trade courses. Part-time students attend classes, providing largely trade work for apprentices, at Queenstown, Rosebery and Smithton. Students are charged fees but apprentices receive free training. A Tasmanian College of Advanced Education is being built at Mt Nelson in Hobart, the 170 acre site having 130 acres suitable for erection of the proposed buildings. Construction of the first stage, although behind schedule has reached an advanced stage.

Good progress was made with the erection of the first stage of the new college at Devonport and the excellent accommodation provided was occupied during the year. Sketch plans for the new college at Burnie were completed and it is hoped to commence construction of the trade block in the next financial year.

Included in the tables that follow are details for the School of Art, established in 1963, and the Conservatorium of Music, established in 1964. The heading 'technical' therefore has very wide application and includes some courses which are cultural and aesthetic rather than purely vocational.

Courses

Professional courses provide the theoretical background for the award of diplomas issued by the Education Department. The following table shows the professional courses available, enrolments, and the number who completed courses:

Technical Colleges
Number of Students Taking Diploma and Post-Diploma Courses

Type of Course	1967		1968		1969	
	Total Enrolled (a)	Completed Course	Total Enrolled (a)	Completed Course	Total Enrolled (a)	Completed Course
Accountancy ..	356	3	304	3	376	3
Architecture ..	59	3	70	7	64	4
Art ..	142	13	111	20	199	18
Bankers Institute ..	16	..	33	..	11	..
Building ..	..	..	..	..	..	..
Chemistry ..	72	8	68	7	81	8
Engineering—						
Civil ..	73	5	64	5	81	9
Electrical ..	60	11	89	10	50	10
Mechanical ..	48	1	37	7	53	2
Electronics ..	..	..	2	..	..	..
Geology ..	..	..	..	..	12	10
Insurance Institute	6	..	20	..	14	..
Library Association	48	6	54	..	57	6
Management ..	29	5	37	5	60	2
Medical Laboratory						
Technology ..	22	..	41	3	27	9
Metallurgy ..	23	3	29	1	29	2
Music ..	41	8	44	10	43	8
Pharmacy (b) ..	35	3	r 44	r 14	42	13
Radiography ..	12	4	r 4	..	12	4
Quantity Surveying	5	1	5	..	5	1
Technical Teaching	5	..	..	..	..	..
Town Planning ..	9	..	8	5	..	..
Valuation ..	25	3	25	..	30	4
Total ..	1,086	77	r 1,089	r 97	1,246	113

(a) Aggregate enrolment for year.

(b) See next paragraph for definition.

Pharmacy: The figures in the above table are incomplete since the course demands a preliminary year at the University and a final year of practical training. On this revised basis, course enrolments were: 63 in 1967, 70 in 1968 and 73 in 1969.

Technical Courses: These do not aim to reach the standard of the professional courses, nor are they directed towards acquiring skill in a trade. They are intermediate between the two and are designed to meet the needs of industry in which there is a growing demand for technicians. On successful completion of a course, a certificate is awarded by the Education Department. Commerce, draughtsmanship, health inspection, hotel management, shorthand-typing and merchandising are examples of the large number of courses available. They are also called *certificate courses*.

Trade Courses: These are designed to complement trade experience and to lead the apprentice to skill in his craft. From 1965, apprentices have been required to attend one full day per week for three years; this has eliminated many evening classes. A certificate of trade proficiency is issued by the Department and courses are available in most trades. Post-trade or journeyman courses are also provided.

The following table shows the number of students who received certificates on successful completion of technical or trade courses, and of preparatory and qualifying courses:

Number of Technical and Trade Students who Completed Courses

Course	1965	1966	1967	1968	1969
Technical and Trade Certificates	1,022	978	913	1,057	1,419
Preparatory and Qualifying Examinations (a)	337	482	452	516	529

(a) These courses prepare students for the School Certificate, Higher School Certificate and public service entry examinations.

Technical Correspondence Courses: These are administered through the Hobart Technical College and are given when attendance at technical classes is not practicable. In 1969, 314 apprentices and others made use of these courses.

Technical Education—Miscellaneous

Fees: In 1969, fees were approximately \$60 per year for professional part-time courses, \$120 for full-time courses and \$24 for certificate and trade courses. Apprentices receive training without charge.

Enrolments: In 1969, part-time enrolments comprised 93 per cent of the total technical college enrolment of 8,336. The full-time students attended accountancy, art, pharmacy or day commercial classes. Fifty-three per cent of the total enrolment was at the Hobart College and 25 per cent at the Launceston College. Fifteen per cent were attempting diploma or post-diploma courses; 31 per cent certificate or post-certificate courses; 41 per cent trade or post-trade courses; and 13 per cent miscellaneous subjects. Seventy-two per cent were male and 28 per cent females.

College Councils: These are appointed locally and represent local trades and industries, professions and municipal councils. They supervise and act as advisory bodies.

Examinations: These are conducted by the Education Department in November each year and supplementary examinations are held in December. Papers are set and marked, or assessments carried out, by outside examiners. In 1967, first-year apprentice examinations were conducted internally; this was extended to second-year level in 1968.

Technical Teachers, Students and Expenditure

The following table shows the numbers of schools, teachers and students engaged in senior technical education, and the yearly expenditure; (details for the School of Art and the Conservatorium of Music are included):

Technical Education—Teachers, Students and Expenditure

Particulars	1965	1966	1967	1968	1969
Schools, Colleges, etc. .. no.	12	11	10	9	9
Teachers—Full-time .. no.	146	154	173	r 181	186
Part-time .. no.	442	591	614	r 710	627
Students—Aggregate (a) no.	7,916	7,962	8,200	8,296	8,336
Expenditure (b) .. \$'000	797	954	1,044	1,375	1,764

(a) Gross number enrolled during the year.

(b) Excludes capital expenditure on new buildings, etc.

Examinations

Introduction

The Schools Board of Tasmania was constituted on 31 October 1944 by the *Education Act* 1944 to devise and govern new systems of awarding school certificates.

In 1946 the school leaving age in Tasmania was raised to sixteen years and the Board instituted a four-year course of academic secondary education leading to the Schools Board Certificate. The Intermediate Examination, which had been conducted by the University at third-year secondary school level until 1938, had been replaced by similar examinations conducted by the State Education Department and the Associated Public Schools. These were replaced by the Schools Board Certificate, studied at fourth-year level, in 1946.

This Schools Board Certificate demanded a level of achievement in basic and optional subjects after a four-year course of general education. Secondary schools were allowed the choice between an accrediting system or an external examination.

In 1959, in order to accommodate the changing system of secondary education in this State, the By-Laws were amended (to take effect in 1960) to provide a wider range of certification at the fourth-year secondary level. This consisted of a basic certificate awarded to any person who completed an approved course and obtained at least one point in the examination. This certificate could be endorsed 'B' for those who gained at least seven points, or endorsed 'A' for those who gained at least seven points, including at least one point in English and passes in two two-point basic subjects.

As a result of the proposals of the Schools Board and the Radford Report, the Schools Board was re-constituted with a membership of twenty-one on 1 September 1966, to allow the Board to become, in 1969, the sole examining and certifying body at the secondary level.

An important change of considerable significance to employers, and to the prerequisites they demand of applicants for employment, concerns the new type of certificate introduced in 1969. There are only two such certificates issued, known as the School Certificate and the High School Certificate. These replaced all previous certificates: the Schools Board Certificate with endorsements A or B or unendorsed, the Secondary Schools Board Certificate of the Education Department and the Matriculation Certificate of the University of Tasmania are no longer issued. The previous certificates were generally speaking *group* certificates demanding, in varying degrees of detail, certain compulsory subjects or groups of subjects as a prerequisite to the award of the certificate. The essential difference is that both of the new certificates are *subject* certificates requiring no compulsory subjects or groups of subjects to be studied.

The Higher School Certificate is issued on the basis of an external examination conducted in December each year, but for the School Certificate there are no external examinations and awards are determined by internal assessment with a wide variety of methods of evaluation. A system of regional moderation has been implemented by the Schools Board to ensure comparability of standards between schools. (See the later section outlining the organisation of *Moderation procedures*.) Final results of the School Certificate are notified to candidates in December by the Principal of the School attended by the candidate. Each candidate receives a printed result slip showing the level of study and the award given in each subject. The formal certificate is issued by the Schools Board of Tasmania in the new year.

The School Certificate

The subjects for this certificate may be taken at various levels and a wide choice is available to cater for different levels of ability and interests. A preliminary award (P) may be granted after the third year of secondary education to those candidates who leave school at this stage. The full award is granted to successful candidates when they have completed four years of study in the subject.

The following table sets out the range of subject levels together with approximate former equivalent standards and awards made at each level:

School Certificate

Subject Level	Standard Approximates to:	Level of Achievement Awarded (a)
1(P)	Secondary Schools Board 1968: three year syllabus ..	Credit, Pass, Lower Pass
I	Level 1(P) with a fourth year added	
II	Schools Board 1968: one-point syllabus	
III	Schools Board 1968: two-point syllabus	

(a) A failure is not recorded on the certificate.

In comparison, the Schools Board Certificate was studied at fourth year high school and subjects were at two levels: (i) one-point, the level of subject achievement being credit or pass; (ii) two-point, the level of subject achievement being credit, pass or lower pass.

The Higher School Certificate

This is taken at the end of the fifth or sixth year of secondary education. Individual subjects may be attempted at Level II or Level III.

Higher School Certificate

Subject Level	Standard Approximates to:	Level of Achievement Awarded (a)
II	1968 Matriculation syllabus: Ordinary level	Credit, Pass
III	1968 Matriculation syllabus: Advanced level	Credit, Pass, Lower Pass

(a) A failure is not recorded on the certificate.

The former Matriculation Certificate was studied at fifth or sixth year secondary school. The levels of subject study were: (i) ordinary level, the level of subject achievement being ordinary level pass; (ii) advanced level, the level of subject achievement being credit, advanced level pass or ordinary level pass.

Some Level III subjects in 1970 and eventually all Level III subjects will be studied in two divisions—Division 1 and Division 2. A student must study both divisions to qualify for a full Level III award. Students who study only one division will be given an award at Level III (p), where (p) signifies either a preliminary or part study of the syllabus. Students may sit for examination in both divisions in the one year or in separate years.

Requirements for matriculation will be determined by the University of Tasmania from the results of Level II and Level III subjects of the Higher School Certificate examinations conducted by the Schools Board of Tasmania.

State Organisation of Moderation Procedures

The Schools Board of Tasmania is the body responsible for awarding the new secondary school awards (the School and Higher School Certificates) discussed in the previous section. The Schools Board is also responsible for ensuring development of satisfactory moderation procedures and the maintenance of subject standards. To this end, the State is divided into eight *moderation regions*. The organisational structure of these regions is outlined in the following section. Moderation is the method used to assess the candidate's performance; it is synonymous with and replaces the term *accrediting* which was in use before 1969.

Committee for Moderation of Standards: This body determines subject standards and reviews moderation procedures. Members of the committee include representatives from the Schools Board, superintendents of high schools and representatives from independent schools and the teachers' union—the Teachers' Federation.

Regional Council: The council reviews operations of the scheme for moderation of standards and recommends variations to the scheme to the Schools Board. The chairman is appointed by the Schools Board from members of the Committee for Moderation of Standards; other members include secondary school superintendents and school principals in the region.

Moderation Advisory Committee: The committee plans details of moderation procedures and investigates problems in particular subject fields. The chairman of the Committee for Moderation of Standards is also the chairman of this body; other members include the members of the Committee for Moderation of Standards and the chief moderators.

State Moderation Committee: The committee promotes the flow of ideas on moderation between regions and identifies and resolves problems connected with particular subjects. The chief moderator in each subject is chairman and the remaining members are the regional moderators (eight) in each subject.

Regional Moderation Committee: The committee is responsible for the application of moderation procedures within the region. Chairmanship is vested in the regional moderator; other members are subject moderators from each school in the region.

As well as the various committees there are a number of positions, mostly filled by teachers, which are basic to the successful operation of the new system. The following briefly outlines the functions associated with each position.

Chief Moderator: Appointed by the Schools Board and responsible for the co-ordination of moderation procedures between regions in each subject field.

Regional Moderator: Appointed by the Schools Board on the recommendation of the Regional Executive Committee. A regional moderator is appointed in each subject field. The duties associated with this position include: (i) maintaining contact between subject moderators within the region and ensuring satisfactory subject standards; (ii) informing subject moderators of current developments in their subject and in the field of assessment.

School Moderator: This position will normally be held by the school principal. The school moderators' duties include: (i) appointing school subject

moderators; (ii) determining the results of each School Certificate candidate in his school and submitting award recommendations to the Schools Board; (iii) communicating result sheets (showing percentage scores of students on test materials) to the Schools Board for distribution to the Regional Moderation Committees; (iv) informing the Regional Executive Committee of names of teachers willing to accept nomination for the position of regional moderator.

Subject Moderator: Appointed by the school principal. The duties include: (i) supervising all details of assessment in his subject for the award of the School Certificate; (ii) informing the Regional Moderation Committee of proposed assessment plans.

Adult Education

Origin and Organisation

Adult education in Tasmania can be traced back to 1914 when the tutorial class movement began in Hobart with three classes and one part-time tutor. The movement spread to the north and north-west, the principal supporters being the Workers' Educational Association and the University which were aided by government grants. The *Adult Education Act* 1948 established a board of nine members, three representing the Education Minister, and six representing: (i) University; (ii) Library Board; (iii) Workers' Educational Association; (iv) Arts Council; (v) Broadcasting Commission; (vi) Education Department.

The Board has a director and nine professional officers (including five regional officers). There are permanent adult education centres in Hobart, Launceston, Devonport and Burnie, as well as a residential college at Campbell Town (known as 'The Grange'). Courses are also held at about sixty suburban and country centres.

Operations

Courses: Classes may last from four sessions to a whole year, though the majority consist of ten weekly meetings. In 1969, there were 660 courses, interesting 8,150 students and involving 242 part-time tutors. Subjects include art, photography, cookery, dressmaking, languages, music, psychology, defensive driving, botany, and stock exchange investment.

Lectures: These cover a wide field and are given, in some cases, by visitors from other States or overseas. Each year the Sir John Morris Memorial Lecture is delivered by an Australian who has achieved world stature in his particular field.

Residential School: The Grange Residential College, leased from the National Trust, was opened in 1964 for short-term courses. Built in 1847, this elegant country house can provide sleeping facilities for 27. A variety of weekend schools have been conducted, as well as summer schools each January.

Drama: This is fostered by providing producers, equipment and advisory services. The Board's drama officer and other experienced tutors assist amateur groups with rehearsals and productions. The Board, on occasions, co-operates in major projects outside the normal scope of amateur groups.

Book Discussion Groups: There are about forty of these groups receiving books and discussion notes each month. Generally the groups meet in private homes and the scheme is particularly appreciated by people in more remote areas.

Other Activities: These include seminars, forums, art exhibitions, music recitals and a recorded lecture service. The Board has been responsible for several publications including 'Launceston—History of an Australian City'.

The following table shows the annual expenditure from Consolidated Revenue on adult education:

**Expenditure on Adult Education
(\$'000)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Adult Education (excluding Loan Fund Expenditure)	119	127	122	145	148

Advanced Education in Tasmania

Origins of Advanced Education

The pace and complexity of society has accelerated since the beginning of the twentieth century and is continuing to do so at an increasing rate. To meet the demands of a modern society a new type of educated person is required.

In Europe during the nineteenth century, the evolution of mechanics institutes and technical colleges filled the gap between secondary school and university. The mechanics institute movement reached its peak in Australia during the 1870s, while the technical school is an early twentieth century development. The improvement in higher education is continued in the advanced education movement which is designed to meet the needs of society in the second half of the twentieth century.

It is envisaged that the colleges of advanced education will provide tertiary education and training with a vocational emphasis, as distinct from the academic education provided by universities. In some states advanced education is being developed from existing technological institutions, but in Tasmania and the Australian Capital Territory separate colleges are being established.

Finance

The colleges are to receive financial support from the Commonwealth Government on the basis of \$1 for every State \$1 spent on capital works and \$1 for every State \$1.85 spent on recurrent expenses. For the triennium 1970-72 Tasmanian colleges will receive from all sources, \$6,500,000 for capital purposes and \$3,400,000 for recurrent expenditure.

Establishment

Following a national seminar on planning for Colleges of Advanced Education held in Hobart at the end of 1967 the educational specifications and a master plan for the Mt Nelson college were prepared. In June 1969 the contract was let for the Resource Materials Centre (stage one of the project). Work will begin on the Schools of Education, Engineering and Applied Sciences during the 1970-72 triennium. It is anticipated that the first on-site lectures will be given in 1972.

When completed the college will provide facilities for the Tasmanian School of Art, School of Dental Nursing, Conservatorium of Music, Hobart Teacher's College and professional level courses presented by the Hobart Technical College. Diploma level courses at the Launceston and Burnie Technical Colleges also come within the system.

Advanced Education Council

The passing of the Tasmanian *Advanced Education Act* 1968 opened the way for the establishment of the college of advanced education. The act provided for a Council of Advanced Education to administer education at the professional level other than in the University of Tasmania. The Council is made up of a Chairman, Vice-Chairman and nine other members. In addition, the Registrar of the College of Advanced Education acts as Secretary to the Council.

University of Tasmania*History*

The University of Tasmania was founded in 1890, and was the fourth to be established in Australia. When teaching began in 1893 with three lecturers and six students it occupied four acres of land on the Queen's Domain at Hobart.

Growth of the University was slow for the first half century, despite the State's progressive policy in education generally. The Faculties of Arts, Science and Law were established originally with Commerce added in 1919 and Engineering in 1922. At the outbreak of World War II, the teaching staff in many departments consisted of one full-time professor or lecturer, possibly with part-time assistants.

After the war, the influx of ex-servicemen filled all Australian universities to capacity and student enrolments in Tasmania rose to 740 in 1947. Financial assistance from both State and Commonwealth Governments enabled the staff to be almost doubled between 1945 and 1950 and energetic research schools developed. A Faculty of Education was established with responsibility for some of the State's teacher training. In 1957 came the Murray Report on the Australian Universities, leading to a significantly increased flow of Commonwealth money into Australian universities generally. Since 1958 the main developments at the Tasmanian University have been the establishment of the Faculties of Agricultural Science and Medicine.

Government of the University

The governing body of the university is the Council, consisting of four members appointed by the teaching staff, four by the graduates through Convocation, one by the undergraduates, two by the two Houses of Parliament, four by the Governor, and three by the Governor on the recommendation of the Council. The Director of Education is an *ex officio* member. The Chancellor is chairman, as he is constitutionally and ceremonially the senior member of the University and the chief executive officer is the Vice-Chancellor.

Finance

The following tables show the income and expenditure of the University of Tasmania:

University Income and Expenditure
(£'000)

Income				Expenditure			
State Government Grant	..	1,765		General Funds	..	..	3,432
Commonwealth Govt Grant	..	1,324		Medical School	..	..	571
Other Grants and Donations	..	559		Other Expenditure	..	..	580
Student Fees	..	686					
Other Income	..	167					
Total	..	4,501		Total	..	..	4,583

Staff and Students

The following table shows the number of teaching staff and students in selected years:

University Teaching Staff and Students Enrolled

Particulars	1945	1964	1965	1966	1967	1968	1969
Teaching Staff (Full-time)							
Professors	12	19	20	25	26	28	32
Others	31	112	125	134	138	141	171
Total Staff ..	43	131	145	159	164	169	203
Individual Students Enrolled	503	1,863	2,083	2,346	2,443	2,592	2,830

The next table shows the teaching staff and courses in which students were enrolled:

University Staff and Enrolments, 1969

Teaching Staff (Full-Time)		Gross Student Enrolments (a)				
Particulars	Number	Course	New Enrolments, 1969	Total Enrolments		
				Males	Females	Total
Professors	32	Masters' and Doctors' Degrees	39	132	27	159
Associate Professors and Readers	22	Bachelor Degrees—				
Senior Lecturers and Lecturers	105	Agricultural Science ..	28	72	11	83
Demonstrators and Tutors	44	Arts	313	490	532	1,022
		Law	55	145	28	173
		Economics	67	249	19	268
		Medicine	35	99	37	136
		Science	99	342	91	433
		Engineering	51	169	1	170
		Total	648	1,566	719	2,285
		Non-Degree Courses—				
		Education	12	100	136	236
		Public Administration .. ..	..	2	..	2
		Other (b)	62	95	81	176
		Total	74	197	217	414
Total	203	Total All Courses	761	1,895	963	2,858

(a) Students enrolled in more than one course are shown in each course for which enrolled. The number of individual students enrolled was 2,830.

(b) Of the 176 enrolments classified as 'other' four were students taking a master degree preliminary course and the remaining 172 enrolments include students enrolled in one or more subjects but not proceeding to a degree or diploma of the University. The figures include candidates for non-University awards, e.g. Diploma of Music, Physical Education, Pharmacy and Tasmanian Teachers' Certificate.

The next table summarises income and expenditure over a five-year period:

University Income and Expenditure—Summary
(\$'000)

Particulars	1965	1966	1967	1968	1969
Income—					
Government Grants (a) ..	2,275	2,626	2,841	3,371	3,089
Other	660	679	899	1,083	1,412
Total	2,935	3,305	3,740	4,454	4,501
Expenditure—					
Total (b)	3,092	3,274	3,763	4,448	4,583

(a) State and Commonwealth.

(b) Excludes expenditure on new buildings and other capital works.

Degrees Conferred

The following table shows degrees conferred:

University of Tasmania—Degrees Conferred (a)

Degree (b)	1964	1965	1966	1967	1968	1969
B.Agr.Sc. Males	..	..	..	5	7	7
Females	..	..	..	..	1	..
B.A. Males	42	53	64	56	65	86
Females	50	61	56	87	104	130
B.Ec. Males	11	15	19	26	33	41
Females	..	1	3	..	2	5
B.E. Males	18	21	13	17	22	28
Females	..	..	2	..	..	..
B.Sc. Males	44	49	63	50	63	77
Females	10	8	12	8	12	26
LL.B. Males	13	11	10	17	18	26
Females	1	..	2	1	1	1
M.A. Males	2	4	2	2	..	2
Females	..	..	1	1	1	1
M.Eng.Sc. Males	..	..	..	..	..	1
Females	..	..	..	..	..	..
M.Sc. Males	..	1	1	3	3	6
Females	..	..	..	..	..	..
Other Males	8	7	11	6	14	13
Females	..	1	..	..	1	..
Total Males	138	161	183	182	225	287
Females	61	71	76	97	122	163

(a) Excluding honorary degrees.

(b) Bachelor degrees include bachelor degrees with honours.

Residential Colleges

There are five residential colleges in the University. Christ College was affiliated with the University in 1933, moved to new premises on the University Campus at Sandy Bay in 1962 and provides accommodation for 103 students. Shortly the College will provide mixed accommodation; the first college of the University of Tasmania to provide this facility. It still caters for a few Anglican theological students. Hytten Hall was opened in 1959 accommodating 120 students. Extensions have raised this figure to 190 students. St John Fisher College opened in 1962 accommodates 70 students and is under the direction of the Catholic Church. Jane Franklin Hall was founded by the Tasmanian

Council of Churches in 1950 as a hall of residence. The hall provides accommodation for 120 female students. Ena Waite College was opened in 1968 and accommodates 22 female students.

Buildings

The present University site at Sandy Bay was chosen in 1944, and a number of army-type huts were erected to accommodate temporarily the rapidly growing Science departments. The first permanent building at Sandy Bay was occupied in 1957. Now the majority of departments are in permanent buildings with extensions either completed or planned for many of the original buildings. The major projects completed in 1969 were the clinical school adjacent to the Royal Hobart Hospital and extensions to the Library. The clinical school was occupied by the departments of medicine, pathology, surgery and child health in December 1969. The extensions to the library provide three additional floors with 450 more readers' places and substantially increased space to house the collections.

Work has begun on extensions to the geology-geography building and the animal house for the medical school. In 1970 construction proceeded on extensions to the physics building and the life science building.

Planning began in 1969 for the women's hall of residence and the law building and these two projects will be given priority in 1970-71. Planning has also started for extensions to the administration building, an animal house for agricultural science and zoology and extensions to the chemistry building which will incorporate a central science laboratory.

Commonwealth Department of Education and Science

The Commonwealth Role in Education

Traditionally education has been a concern of the States; however, in 1945 a Commonwealth Office of Education was established and a branch was opened in Hobart. The principal functions of the Tasmanian branch were: (i) migrant education; and (ii) administration of Commonwealth University Scholarships. The Hobart office was closed in 1951, and its functions transferred to the State, which acted as an agent for the Commonwealth. In 1964 the growing commitment of the Commonwealth Government in education led to the re-opening of its office in Hobart.

Since 1964-65, the Commonwealth has directly financed certain educational activities once exclusively State responsibilities and educational grants have been made under Section 96 of the Constitution. In addition to aid given to students under five Commonwealth scholarship schemes, grants are also made for universities, colleges of advanced education and other technical training facilities, the provision of science laboratories and apparatus, and for teachers colleges. Research projects, mainly in universities, also benefit by grants from the Commonwealth Government.

The Commonwealth grants to universities and colleges of advanced education are made in accordance with Commonwealth-State matching formulae involving agreed expenditure by the States. The Commonwealth acts alone in the matter of grants for: (i) the construction of teachers colleges, provided that 10 per cent of available places are filled by students not bonded to State education departments; (ii) technical training facilities; (iii) science facilities; (iv) school library facilities; (v) pre-school teacher training facilities.

The following table shows the amounts paid by the Commonwealth Government for education in Tasmania over a three-year period:

**Total Commonwealth Payments for Education in Tasmania
(\$'000)**

Particulars	1967-68	1968-69	1969-70 ^p
Payments made for—			
University	1,827	2,217	2,605
Colleges of Advanced Education ..	138	291	1,162
Student Assistance—Benefits paid to Students	634	708	800
Teachers Colleges	360	960	180
Technical Training	334	275	376
Science Facilities	420	409	409
Research	158	194	237
School Libraries .. .. .	..	72	291
Pre-School Teachers Colleges .. ..	..	100	75
Per Capita Grants to Independent Schools ..	..	..	286
Total	3,871	5,226	6,421

University of Tasmania

In the triennium 1970-72, proposed Commonwealth payments to the University of Tasmania are to total \$6.9m, consisting of \$1.8m for capital costs and \$5.1m for recurrent expenditure.

Colleges of Advanced Education

Proposed Commonwealth payments for the period 1970-72 are to total \$4.58m, made up of \$3.25m for capital costs and \$1.23m for recurrent expenditure. The major Tasmanian project is the construction of a College of Advanced Education at Mt Nelson which was commenced in 1969.

Technical Training Facilities

Commonwealth grants are made to extend and improve facilities for training apprentices and technicians. From 1964-65 to 1967-68, annual grants of \$334,000 were made to Tasmania, while in the three-year period ending 1970-71 grants of \$325,400 per annum are being made.

Science Facilities

Commonwealth grants have been made since July 1964 to assist in the construction and equipping of science teaching facilities in government and non-government schools. The total planned distribution for the three years ended 30 June 1971 is: government schools, \$706,500; and non-government schools, \$520,000.

Teachers Colleges

The Commonwealth Government provided \$1.5m for the construction of a new teachers college at Launceston, which was opened by the Federal Minister for Education and Science in October 1969.

Research Projects

In May 1965, the Australian Research Grants Committee was established to advise the Commonwealth Government on the granting of money for research projects. In 1966 the Commonwealth and State Governments each allocated \$2m (a total of \$4m) for Australian research projects. Because the States decided not to make further contributions, the Commonwealth made \$9,470,969 available in the 1967-1969 triennium and \$4,106,615 in 1970.

Research grants awarded to the University of Tasmania are as follows: 1967, \$148,552; 1968, \$225,503; 1969, \$163,086; 1970, \$155,261.

Secondary School Libraries

In August 1968, the Commonwealth announced a programme which provided \$27m over three years for the development of Australian secondary school libraries. The funds are available for: (i) the erection, alteration or extension of library buildings; and (ii) the provision of furniture, equipment and basic stock of books and materials. The allocation for Tasmania for each year of the triennium 1969 to 1971 is \$290,900 comprising: (i) government schools \$216,200; (ii) Catholic schools \$43,200; (iii) other non-government schools \$31,500.

In addition to the capital programme the following steps, designed to improve the standard of school libraries are being undertaken: (i) colleges of advanced education will be encouraged to conduct school librarian courses; (ii) Commonwealth Advanced Education scholarships will be made available for these courses; (iii) in co-operation with State Education departments and library authorities the Commonwealth sponsors short specialist librarian courses for teachers. A special sum of \$30,000 was provided in the 1969-70 Budget for this purpose.

Pre-School Teachers Colleges

Unmatched capital grants totalling \$2.5m over the three-year period 1 July 1968 to 30 June 1971 are being provided for the expansion of existing facilities and the training of extra pre-school teachers.

Lady Gowrie Child Centre

This pre-school demonstration and research centre in Hobart was established by the Commonwealth in 1940. It is concerned with a study of the factors promoting or retarding physical and mental health in young children and in demonstrating an educational health programme based on the developing needs of children aged three to six years. The Centre is used for observation by students of medicine, psychology, education, domestic science and nursing.

Per Capita Grants to Independent Schools

From the beginning of the 1970 school year, the Commonwealth has provided per capita grants to independent schools throughout Australia, including special schools for the handicapped; rates are \$35 for each primary student and \$50 for each secondary student. Expenditure in Tasmania in 1969-70 was \$286,302.

Curriculum Development

Tasmania is participating in the Australian Science Education Project which evolved from the earlier Junior Secondary Science Project. It is the first national curriculum project to be established in Australia under government sponsorship and is financed by contributions from the Commonwealth Government (through the Department of Education and Science) and from all State education departments. Over a five-year period, commencing 1968-69, the Commonwealth will provide \$750,000 and the States, \$450,000.

Commonwealth Scholarship Schemes

The Commonwealth Government makes payments to students under the following five Commonwealth Scholarship Schemes:

Commonwealth University Scholarship Scheme: This scheme provides assistance to students taking approved degree courses at an Australian university. Selection is based upon results obtained in the matriculation examination or in an approved degree course. In Tasmania, approximately 340 awards

are made each year. Benefits include the payment of all compulsory fees and, subject to a means test, a maximum living allowance of \$620 per annum for a student living with his parents, or \$1,000 for a student living away from home.

Commonwealth Advanced Education Scholarship Scheme: Under this scheme assistance is provided to those taking approved tertiary level courses in Australia. Selection is based on results obtained in the Matriculation examination, in an approved course or in some cases on other criteria determined by individual institutions. Approximately 40 awards are made each year in Tasmania. Benefits are the same as those payable under the Commonwealth University Scholarship Scheme. Under both schemes, a guidance service is provided by the Commonwealth Department of Education and Science.

Commonwealth Secondary Scholarship Scheme: Each year approximately 320 Tasmanian secondary school students are awarded a two-year scholarship to assist them with study for the Matriculation examination. Each scholarship is worth a maximum of \$400 per annum and a minimum of \$250. Components of the scholarship are: living allowance \$200; book allowance, \$50; and reimbursement of tuition fees up to \$150.

Commonwealth Technical Scholarship Scheme: An annual quota of approximately 80 scholarships is available to Tasmanian students to assist them with approved full-time or part-time courses, mainly at certificate or technical level and in approved full-time diploma courses in Art, Music and Agriculture. Benefits for full-time students are the same as for secondary scholarships. Part-time students receive \$100 per annum plus payment of compulsory fees up to \$100.

Commonwealth Post-Graduate Awards: Awards are made annually to enable students to undertake post-graduate studies at an Australian university. Selection is made by each university and the award, subject to annual renewal, may be held for a maximum of: (i) four years in the case of a doctorate degree candidate; (ii) two years in the case of a master's degree scholar. Award holders receive a living allowance of \$2,350 per annum and provision is made for assistance with travel, establishment and thesis costs. Married male scholars receive a dependant's allowance for wife and children.

Expenditure: The following table shows Commonwealth expenditure on Scholarship Schemes in Tasmania since 1965-66:

Expenditure: Scholarship Schemes
(£'000)

Type of Scholarship	1965-66	1966-67	1967-68	1968-69	1969-70 ^p
University	204	289	349	411	554
Advanced Education	6	15	19	20	42
Technical	6	12	25	30	33
Secondary	180	184	178	174	180
Post-Graduate	39	58	63	77	98
Total	435	558	634	712	907

Students in Commonwealth Scholarship Schemes: The next table shows the number of students holding each type of Commonwealth Scholarship in Tasmania at 30 June:

Number of Students at 30 June: Commonwealth Scholarship Schemes

Particulars	1966	1967	r 1968	r 1969	1970
University	414	503	554	627	788
Advanced Education	40	66	85	106	144
Technical	32	62	123	137	152
Secondary	583	572	567	544	553
Post-Graduate	21	32	32	33	38
Aboriginal Secondary .. .. .	..	..	..	..	3
Aboriginal Student Grants .. .. .	..	..	..	..	2

International Scholarship Schemes

Students come to Australia to study under a variety of schemes, e.g. the Colombo Plan, the Special Commonwealth African Assistance Plan, the Australian International Award Scheme, the South Pacific Aid Programme, SEATO, UNESCO, Commonwealth Co-operation in Education, etc.

In Tasmania the number of sponsored students receiving training in educational institutions has increased rapidly since 1960. Training is arranged, usually on a full-time basis, with the University of Tasmania, the Tasmanian Education Department, non-government schools, government departments, and industry. In addition to long-term sponsored students, short-term visitors have also been brought to the State for periods of up to one year, for specialised experience in educational, industrial, commercial, technical, or scientific fields. From 1965 to June 1970, 258 short-term visitors of this type came to Tasmania.

The Department of Education and Science arranges reception, accommodation, travel and payment of allowances for all sponsored students and also makes arrangements for their training. Professional guidance on academic matters is provided by education officers for all overseas students, both sponsored and private. The Hobart office also acts on behalf of the Department of External Affairs for all welfare matters concerning overseas students and provides educational advice to the Immigration Department concerning private overseas students.

Sponsored Training Statistics: The majority of full-time sponsored students, as the next table shows, come to Tasmania under the Colombo Plan:

Number of Full-Time Sponsored Students

Scheme	1965	1966	1967	1968	1969	1970
Colombo Plan ..	78	104	101	104	79	87
Other	3	4	4	15	23	27
Total ..	81	108	105	119	102	114

Enrolment: In 1970, 108 full-time *sponsored* students were enrolled at the University of Tasmania, five students were studying for matriculation and one was at Hobart Teachers College. The most popular bachelor degree courses, for sponsored students in 1970 were: Engineering, 40; Science, 27; Arts, 14; Agricultural Science, 11.

Other Scholarship Schemes

The Department of Education and Science plays a role in the administration of the following scholarship schemes: Queen Elizabeth II Fellowships; ANZAC Fellowships; Australian Agricultural Council Scholarships; Australian-American Education Foundation Awards; Confederation of British Industry Scholarships; and various scholarships offered to Australians by overseas governments.

EDUCATIONAL RADIO AND TELEVISION IN TASMANIA*Introduction*

The Australian Broadcasting Commission provides educational broadcasts for schools on both radio and television which range from pre-school programmes such as *Play-School* (TV) and *Kindergarten on the Air* (Radio) to Matriculation *Shakespearean Drama* (TV) and *Economics* (Radio).

Many programmes originate within the State, some are produced by, and shared with, other States, some are produced on a national basis, while others are imported from such organisations as B.B.C. and Redifussion.

Use of Programmes

Radio: All schools in the State have radio receivers and use one or more of the programmes provided. In most primary schools programmes are taken direct from the air, but secondary schools use a tape service provided by the Education Departments Teaching Aids Centre. The Centre records all Secondary programmes and distributes the tapes on loan to schools which would otherwise have trouble fitting programmes into school timetables. Some primary programmes are also recorded for schools in poor reception areas.

Television: Tasmania leads the Commonwealth in the availability and use of Educational Television. Every State and independent school in the State within television reception areas is equipped with at least one receiver. The schools have a standard issue of one free set each and extra sets may be purchased. For extra sets the State Government provides a subsidy equal to fifty per cent of the purchase price. The maximum use of television is made by primary schools where timetables are quite flexible; many secondary schools have difficulty in planning timetables so that classes may view programmes. For this reason great interest is being shown in experiments with video-recording which, it is hoped, will make television as flexible an educational aid as taped radio.

The following tables show the usage of selected radio and television programmes in Secondary and Primary Schools.

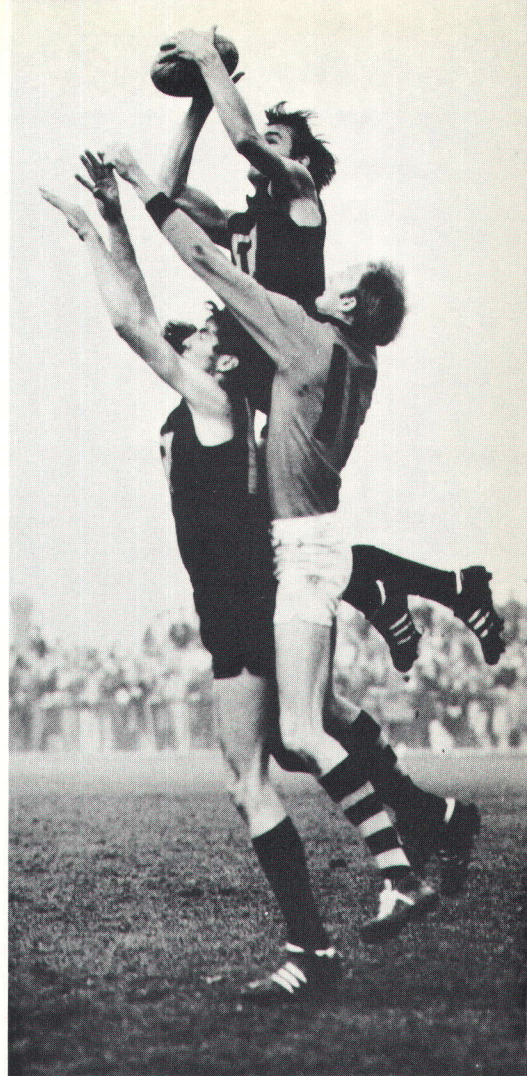
Secondary Schools Taking Schools Broadcasts, Selected Programmes Received

Particulars	High	District	Area	Catholic	Other Independ- ent	Total
SCHOOLS						
Number in State ..	30	6	35	18	8	97



(Mercury)

'Morning Cloud' winner of the 1969 Sydney to Hobart yacht race



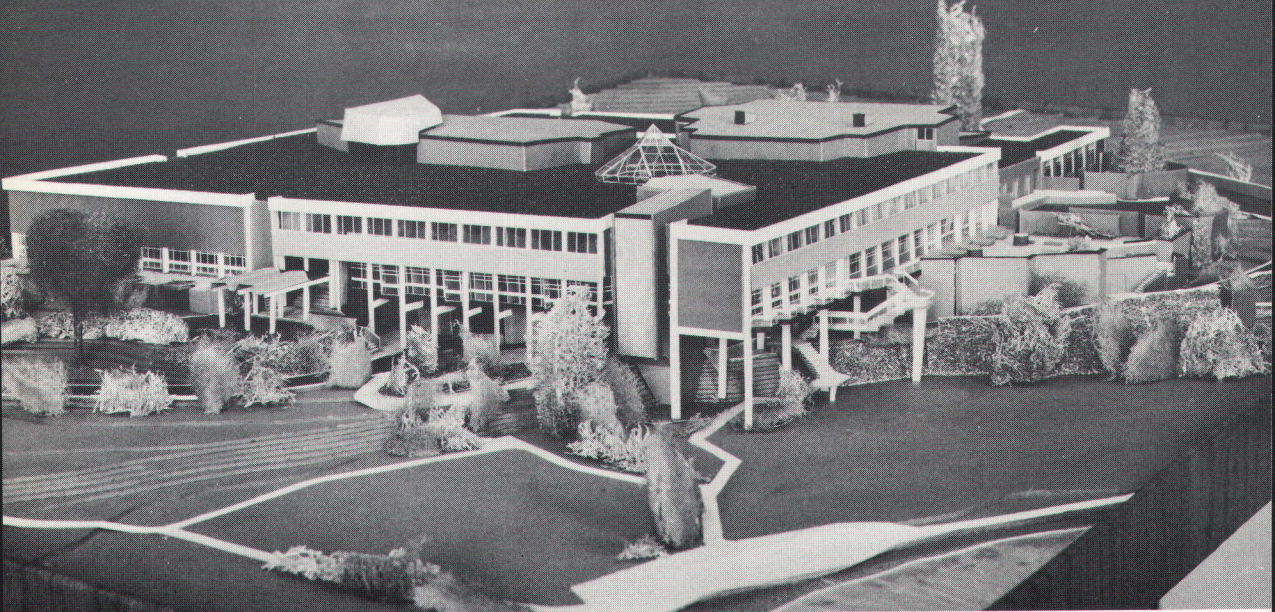
(Mercury)

Australian Rules Football, Tasmania defeated Western Australia by two points

Fleet competing in the International Cadet World Championships on the Derwent River

(Mercury)





Model of the proposed Rosny Matriculation College

(Tasmanian Education Dept)

Stratgordon school and multi-denominational church (left)

(Tasmanian Education Dept)



Secondary Schools Taking Schools Broadcasts, Selected Programmes Received—*cont.*

BY RADIO

Type of School	School Certificate English		Spoken English		From the Library Shelf		German for Schools		Good Health	
	Schls	Classes	Schls	Classes	Schls	Classes	Schls	Classes	Schls	Classes
High	10	37	10	32	13	87	4	4	..	..
District	2	2	3	11	2	2	1	1	1	1
Area	3	4	11	28	7	13	..	..	..	..
Catholic	5	10	4	11	3	5	1	2	3	5
Other Independent	4	9	8	12	3	4	1	2	..	..
Total ..	24	62	36	94	28	111	7	9	4	6

BY TELEVISION

Type of School	Secondary Social Studies		1st Year Science		1st Year Mathematics		Art of the Film		Secondary French	
	Schls	Classes	Schls	Classes	Schls	Classes	Schls	Classes	Schls	Classes
High	23	73	33	48	27	50	6	17	11	17
District	4	6	5	6	4	5	1	2	1	1
Area	17	25	18	22	5	6	4	7	..	..
Catholic	7	7	15	20	18	25	5	6	6	8
Other Independent	2	6	3	3	2	2	1	1	2	5
Total ..	53	117	74	99	56	88	17	33	20	31

Primary Schools Taking Schools Broadcasts, Selected Programmes

Particulars	Special	District	Area	Primary	Catholic	Other Independent	Total
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SCHOOLS

Number in State	15	6	35	150	49	15	270
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RADIO PROGRAMMES RECEIVED

Type of School	Health for Grades V and VI		Cord Cursive Writing III and IV		Music Box I and II		Language and Living V and VI		Folk Dancing	
	Schls	Classes	Schls	Classes	Schls	Classes	Schls	Classes	Schls	Classes
Special	3	6	3	7	4	7	3	6	2	4
District	2	4	4	4	4	4	1	2	..	..
Area	24	46	27	59	27	59	6	10	..	..
Primary	90	264	114	246	114	246	21	36	22	52
Catholic	25	57	23	44	23	44	8	18	11	26
Other Independent	8	12	6	8	2	4	4	6	1	1
Total ..	152	389	177	369	174	364	43	78	36	83

Primary Schools Taking Schools Broadcasts, Selected Programmes—*continued*

TELEVISION PROGRAMMES RECEIVED										
Type of School	Science V and VI		Primary Maths		Social Science III and IV		Making Music		Primary English	
Special	5	9	7	12	8	11	9	14	3	6
District	4	6	6	8	5	8	3	4	1	1
Area	43	68	31	63	32	52	14	18	22	28
Primary	171	320	127	238	165	280	76	117	66	110
Catholic	42	79	36	90	36	64	20	34	13	27
Other Independent	12	20	7	11	9	14	2	7	5	7
Total ..	277	502	214	422	255	429	124	194	110	179

Special Uses of Radio and T.V. Series: Radio and television programmes have proved exceptionally valuable in establishing new curricula. The new Tasmanian Grade II Social Science Curriculum was introduced in 1970 with the support of a new television series made by the A.B.C. in close consultation with the Education Department's Curriculum Centre. This series made the task of teachers taking the new course for the first time much easier. The programme was backed by extensive work kits provided by the Teaching Aids Centre.

Selection of Programmes: Curriculum Officers and teachers are represented on the Planning and Appraisal Committees for all Tasmanian produced programmes which also assist with the selection of series from other sources. Overall planning is guided by the State Advisory Committee which is chaired by the Director-General of Education and includes representatives of the A.B.C., University of Tasmania, Education Department and Independent Schools.

Schools Broadcast Staff: Apart from technical staff, the A.B.C. employs the State Supervisor of Education (Schools Broadcasts), two radio producers, two television producers and their staff of script assistants and clerks.

The Education Department provides a Liaison Officer and Studio Teachers, seconded full time to the A.B.C. The Liaison Officer maintains contact with schools to see that teachers are aware of programmes and feeds back reaction of teachers and classes. The Studio Teachers act as talent on the television programmes and prepare broadcast material.

LIBRARY SERVICES

State Library of Tasmania

Introduction

Tasmania's present State Library services and facilities had their origins in a subscription library formed in Hobart in 1849 supplemented by lesser collections of books in mechanics' institutes, schools of art and circulating libraries based in various localities.

Some of the mechanic institute libraries, sometimes known as 'public' libraries in country districts, were established well before the Hobart subscription library. Such a library at Bothwell was established in 1835, another at Evandale in 1847 while others at Sorell, Campbell Town and Westbury were in existence in the early 1840s. However, the Hobart Library provided the principal basis from which the State Library of Tasmania was eventually developed.

Development and Financial Difficulty

The subscription library in Barrack Street, Hobart, had 124 members who each subscribed at least one guinea a year for the right to use the facilities. Books were purchased with a £100 'grant-in-aid' made annually by the Legislative Council. The grant was doubled from 1854 to 1860. In 1860 the library was moved to the Hobart Exchange Buildings, opened to the public and was to have received an increased government grant but due to inadequate support from public appeals the proposed £400 grant was substantially reduced. For a period the library struggled against financial difficulties, during which time the public were denied access to facilities, but the Trustees were forced to close down in 1867.

Legislation was introduced three years later under which the Tasmanian Public Library was formed, control resting jointly in the hands of the Government and Hobart City Council. The library was placed in the newly-erected Town Hall and facilities made freely available to the public. Finance for the venture was by way of a £1,700 trust made available by the State Government, while the Hobart City Council contributed towards the librarian's salary. Despite the improved financial arrangements, the library was again in difficulty by August 1872 when the Trustees appealed to the government and Council for increased aid. As a result, Council annual contributions were increased to the equivalent of a penny rate, about £400 a year. This increased contribution and renewed government 'grants-in-aid' from 1881 together were insufficient to prevent a serious inhibition of library services. In 1880 the Trustees had seriously considered expanding the library to include a lending department but were forced to abandon the idea for financial reasons.

Andrew Carnegie Endowment

By 1890, the Town Hall facilities were overcrowded and inadequate and the Government was asked to provide a new building. Negotiations were still proceeding in 1892 but the prevailing economic conditions precluded government aid at that time. Nothing further was achieved until 1902 when philanthropist Andrew Carnegie was approached for an endowment to build a new library.

Carnegie agreed to provide £7,500 on condition that local authorities provided a suitable rent-free site and sufficient funds for effective maintenance. He also specified provision of a free public lending service as a condition of the endowment. Previously the library trustees had been able to provide only reading room and reference facilities. To fulfil Carnegie's conditions, Hobart City Council provided a site on a ninety-nine year lease at the corner of Argyle and Davey Streets and an Act for the endowment and management of the Tasmanian Public Library was promulgated in 1902. The new library, incorporating a lending service, was opened in 1907. The Act failed to guarantee sufficient funds for adequate services and facilities and in consequence both reference and lending services suffered. Up to 1932, the Trustees had been able to spend a total of £200 a year on new publications. The bookstock was augmented sporadically by gifts and bequests, perhaps the most important of these being the William Walker Bequest received by the library in 1924 which consisted of thousands of books and pamphlets on Australia and Tasmania. This collection was added to by a further bequest from the Walker family in 1933. The Library's already inadequate staff was further strained by the introduction, in the early thirties, of a Children's Library which proved embarrassingly popular.

Free Library Movement

Tasmania's lack of library facilities led to the formation of the Free Library Movement in 1938. Although mainly campaigning to make the com-

munity as a whole more library conscious, the Movement soon became more involved in sponsoring plans for free rural library services. At the start of World War II the Movement, in association with the Tasmanian Public Library, organised a Camp Library Service to meet the needs of State military depots and posts. In 1941, Tasmania had only one free library (in Hobart) and all other public library needs were served by a few small subscription libraries and mechanics institutes. Recognising the need for more free libraries the government approved an annual grant of £1,000 to the Free Library Movement to be used to encourage establishment of municipal free libraries. The government also instituted the Rural Libraries Advisory Board, with the power to subsidise free libraries formed by municipal councils.

The Board decided to make its subsidies in the form of book collections of a value at least equal to the council's annual expenditure provided this was the equivalent of a halfpenny in the £ rate on assessed annual values. By 1943 eleven free libraries had been established under this scheme. Meanwhile, in 1942, the Tasmanian Public Library established its own country reference service offering use of the facility to anyone living more than five miles from Hobart G.P.O.

Investigation and Development of Services

In an effort to overcome difficulties inherent in the existing schemes the government commissioned an investigation, by the Commonwealth National Librarian into library facilities and services. After extensive investigation a plan incorporated in the Binn's Report, 1943, which became the basis of the *Libraries Act* 1943, was put forward. It suggested mainly: (i) that the Tasmanian Public Library amalgamate with the Rural Libraries Advisory Board to become the State Library; (ii) that library service should be co-ordinated and improved and should be financed jointly by the Government and municipal authorities; and (iii) that a new library building should be an urgent post-war necessity.

The Tasmanian Public Library in 1935 was assessed as follows: 'For a city the size of Hobart, the library is the poorest in Australia and New Zealand. The library's function, both as a state and local institution, have been overlooked. Its local service is poor and its service for libraries outside the metropolis negligible'.

The *Libraries Act* 1943 was designed to provide Tasmania with a library service that would compete with the best available and compensate for its inauspicious beginning. It has been described as the most generous instrument of library legislation in Australia. Included in the Act were provisions for the constitution and incorporation of the Tasmanian Library Board with wide powers and responsibilities among which were the extension of library services throughout Tasmania and control of State aid to municipal libraries. In accordance with the Act's provisions, the State Library of Tasmania was established as from 1 January 1944 with Sir John Morris K.C.M.G. as first chairman of the Tasmanian Library Board. Sir John was a vigorous leader and directed Board policies during a most successful period of expansion until his death in 1956.

Development of central State Library services has been paralleled by development of country services. One provision of the *Libraries Act* was that subsidies would be made to libraries formed by municipalities 'adopting' the Act and that subsidies inaugurated by the Rural Libraries Advisory Board should continue. By 1958 forty municipalities had adopted the Act and had been assisted in establishing free libraries and at 30 June 1970 only Glamorgan municipality was not included in the scheme.

State Library Services

Present State Library Services incorporate three major facilities: (i) the State Reference Library and State Archives in Hobart; (ii) lending Library services to adults and children (some of which are regionalised into larger and more efficient groups such as the Hellyer Regional Library system on the North West Coast); and (iii) bookmobile services operating in municipalities in the South East of the State, in the five North West municipalities (Burnie, Penguin, Wynyard, Waratah and Circular Head) and a similar bookmobile operated by the Launceston City Council in suburban and rural areas of St Leonards, Lilydale and Westbury municipalities.

State Reference Library and State Archives: This reference library has a book stack of more than 135,000 books, magazines and periodicals. The service provides reference facilities and information for people of varied interests and ages, a recent major development being the formation of an information and reference service for companies and industries.

The following table outlines main expenditure over a five year period:

Total Expenditure and Expenditure on Selected Items**(\$)**

Item	1964-65	1965-66	1966-67	1967-68	1968-69
TOTAL EXPENDITURE					
Expenditure	477,818	515,921	553,141	617,049	660,418
SELECTED ITEMS					
Salaries and Payroll Tax ..	226,912	244,575	261,454	310,532	350,715
Purchase of Books, etc., Adults	121,712	160,940	146,680	166,243	153,287
Cash Grants to Municipalities..	22,258	30,482	31,550	36,655	39,099
Lady Clark Library	42,028	10,000	40,918	27,444	37,578
Power, Fuel and Cleaning ..	19,412	19,643	22,333	22,557	23,281

The State Archives is a repository for all official government records in accordance with the *Archives Act* 1965. Recent acquisitions include the diaries of Sir Elliott Lewis, the 'Philosopher' Smith papers, and the manuscript of J. R. Skemp's *Memories of Myrtle Bank*. The special collections house large and unique collections of books, pamphlets, maps and documents relating to Tasmania's history and include: (i) the Wallace Collection; (ii) the Crowther Collection—a large research collection of books, pamphlets, etc., relating to Australia and Tasmania; (iii) the Allport Library and Museum of fine arts—a bequest accepted by the government in 1965, of the late Henry Allport consisting of a collection of antique furniture, china, glass, silver, pictures, prints and rare books.

Lending Libraries: The use of this facility increases each year, particularly in Hobart, Clarence, Launceston and the North-West Coast. Over the whole State there was a four per cent increase in book borrowing during 1968-69. Record numbers of books were borrowed in Hobart (903,436 volumes) and from the Launceston City Library system (537,568 volumes).

Lady Clark Children's Library: Since 1952, a complete network of children's libraries has operated throughout the State. This service was established in 1944 as a memorial to Lady Clark, wife of a former Governor, and generally

provides the children's books by depositing them in municipal libraries and supplementing this provision where necessary by providing small collections in certain schools.

Bookmobile and Other Services: The bookmobile services operating from Hobart, Launceston and Burnie serve schools, institutions and districts without libraries and in 1968-69 issued 281,872 books. In addition, the State library incorporates photocopying facilities and a film and recorded music lending service.

The next table illustrates the use of these facilities since 1964-65.

**Bookstocks and Books, Films and Records Borrowed
(Number)**

Item	1964-65	1965-66	1966-67	1967-68	1968-69
Bookstocks (a)	511,442	566,581	591,248	611,041	652,931
Books Borrowed—					
Adults	1,891,203	1,985,010	2,011,664	2,038,416	2,146,509
Children	889,998	1,012,752	1,064,155	1,150,470	1,170,453
Total	2,781,201	2,997,762	3,075,819	3,188,886	3,317,062
Film Borrowed	15,242	15,050	15,893	13,312	12,124
Records Borrowed	18,596	20,101	22,545	26,892	29,872

(a) As at 31 March.

Recent Developments

The growth of Tasmanian library services is indicated in the table below by the growth of bookstocks held, firstly by the Tasmanian Public Library (from 1870 to 1942) and by the State Library of Tasmania.

Bookstocks Held by the Tasmanian Public Library and the State Library, Selected years

Item	1870	1875	1885	1890	1895	1900	1950	1955	1960	1969
Stock ..	5,800	7,257	9,575	10,535	10,986	11,518	183,062	266,708	272,557	652,931

The immense growth of library facilities and services in the relatively short period from 1943 to 1956 pinpointed one vital area of need—adequate housing for the main facilities. A new library building had been promised when the *Libraries Act* 1943 was brought down but it was 1956 before approval was given for construction of Stage I of the new building to replace the one erected with a Carnegie grant in 1904. By May 1962 the new building, the first new library built in Australia since World War II, was completed on the corner of Murray and Bathurst Streets, Hobart. Stage II of the building was started in 1968 and is scheduled for completion in 1971, as is also a new Regional Library building in Launceston. Construction of these buildings is expected to be followed, in the near future, with construction of a new building in Burnie to house the Hellyer Regional Library.

The Tasmanian Library Board achievements to this stage have substantially fulfilled its intentions, as stated in the first annual report covering January to June 1944 by the Chairman Sir John Morris, who said: 'It is the policy . . . to make Tasmania a model library State, and the foundations are being laid for a

system which will, it is hoped, before many years, measure up both in city and country to the library standards long since established in Great Britain and North America'.

SOCIAL WELFARE

Commonwealth Department of Social Services

In Australia, the major role in the field of social welfare is played by the Commonwealth Government and benefits are uniform throughout the States. In this chapter, the rates of benefits are specified and the conditions governing them are stated in broad outline. The role played by the Tasmanian Government is described in a later section headed 'State Department of Social Welfare'.

The following table shows expenditure in Tasmania from the National Welfare Fund on benefits under the Federal *Social Services Act*. The most noticeable fluctuations occur in expenditure on unemployment benefits.

Commonwealth Social Welfare Services Payments
(\$'000)

Benefit or Service	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Age and Invalid Pensions ..	12,343	13,184	13,439	14,574	15,414	16,768
Widows' Pensions ..	1,467	1,699	1,791	1,983	2,125	2,465
Aid to Deserted Wives ..	..	..	..	..	..	67
Maternity Allowances ..	272	251	243	243	254	267
Child Endowment (a) ..	6,113	6,306	6,318	6,912	6,612	6,710
Unemployment Benefits ..	750	583	275	228	264	297
Sickness Benefits ..	215	201	174	190	165	166
Special Benefits ..	52	52	57	47	42	55
Rehabilitation Service ..	44	60	54	60	58	76
Funeral Benefits ..	25	26	33	39	39	42
Total ..	21,281	22,363	22,384	24,276	24,973	26,913

(a) In 1963-64 and 1966-67, five twelve-weekly payments were credited directly to bank accounts instead of the usual four.

Commonwealth activity in social services began with the passage of the Federal *Invalid and Old Age Pensions Act* 1909. This and the *Maternity Allowances Act* were administered by the Department of the Treasury until 1941 when the Department of Social Services commenced to function as a separate organisation. Later, the functions of the Department were widened with the passing of the *Child Endowment Act*, the *Widows' Pensions Act* and the *Unemployment and Sickness Benefits Act*. A referendum held in 1946 empowered the Commonwealth to legislate for the provision of certain social services formerly provided by the States. In 1947, a consolidated *Social Services Act* was passed. The Department also administers the *Aged Persons Homes Act* and the *Sheltered Employment (Assistance) Act* and co-operates with the Commonwealth Department of Health in the administration of the *National Health Act*.

Budget of August 1970

In the section that follows, a description is given of the various pensions, benefits, etc. The rates and conditions are varied from time to time by amending legislation; those shown were announced in the Federal Budget of August 1970 (the Federal Treasurer outlines social service proposals in his budget and these are implemented in later Acts).

The next table sets out the proposed social service benefit rates announced in the 1970 Budget.

Commonwealth Social Benefits Service, 1970-71
(\$ per week)

Benefit	Rate (maximum)		
	Existing 1969-70	Proposed 1970-71	Increase
Age and Invalid Pensions and Sheltered Employment Allowances—			
Single person (a)	15.00	15.50	0.50
Married couple (Both eligible and living together)—each	13.25	13.75	0.50
Married couple (Both eligible but living apart through ill health)—each (a)	15.00	15.50	0.50
Married couple (One eligible) (a)	15.00	15.50	0.50
Wife (if not a pensioner) (b)	7.00	7.00	..
First child under 16 years (c)	2.50	2.50	..
Second and each subsequent child under 16 years (c)	3.50	3.50	..
Guardian's Allowances—			
Where there is a child under 6 years or an invalid child requiring full-time care	6.00	6.00	..
Other cases	4.00	4.00	..
Maternity Allowances—			
No other children	(d) 30.00	(d) 30.00	..
1 or 2 other children	(d) 32.00	(d) 32.00	..
3 or more other children	(d) 35.00	(d) 35.00	..
Multiple Births—			
Additional payment for each additional child	(d) 10.00	(d) 10.00	..
Child Endowment—			
First child under 16 years	0.50	0.50	..
Second child under 16 years	1.00	1.00	..
Third child under 16 years	1.50	1.50	..
Each other child under 16 years	(e) 3.50	(e) 3.50	..
Student child under 16 years and under 21 years	1.50	1.50	..
Widows' Pensions (a)—			
Class A—Widows with dependent children	15.00	15.50	0.50
Mothers' Allowances—			
Where there is a child under 6 years or an invalid child requiring full-time care	6.00	6.00	..
Other cases	4.00	4.00	..
First child under 16 years (c)	2.50	2.50	..
Second and each subsequent child under 16 years (c)	3.50	3.50	..
Class B—Widows aged 50 years or more (f)	13.25	13.75	0.50
Class C—Widows under 50 years of age in necessitous circumstances (g)	13.25	13.75	0.50
Funeral Benefits (h)	(d) 40.00	(d) 40.00	..
Unemployment and Short-term Sickness Benefits—			
Adult or married minor	10.00	10.00	..
Spouse	7.00	7.00	..
First child under 16 years	2.50	2.50	..
Second and each subsequent child under 16 years	3.50	3.50	..
Person 16 and under 18 years	4.50	4.50	..
Person 18 and under 21 years	6.00	6.00	..
Long-term Sickness Benefits (i)—			
Adult or married minor	10.00	15.50	5.50
Spouse	7.00	7.00	..
First child under 16 years	2.50	2.50	..
Second and each subsequent child under 16 years	3.50	3.50	..
Person 16 and under 21 years	4.50	10.00	5.50
	or 6.00	or 4.00	
Rehabilitation Service	(j) 5.00	(j) 5.00	..
Personal Care Subsidy (k)	5.00	5.00	..

(a) Supplementary assistance at a maximum rate of \$2.00 a week is payable, subject to the payment of rent and to a means test, to single age and invalid pensioners, to a married pensioner whose spouse is not a pensioner, to each of a married pensioner couple who,

because of illness or infirmity of either or both, cannot live together in a matrimonial home, and to widow pensioners. Supplementary assistance may also be paid to recipients of sheltered employment allowances.

- (b) Wife's allowance is payable, subject to a means test, to a non-pensioner wife if the pensioner is permanently incapacitated for work or is blind or has a child.
- (c) A child is treated for pension purposes as being under 16 years until he attains 21 years if he is a full-time student and dependent on the pensioner.
- (d) Lump sum payment.
- (e) Child endowment for the fourth and subsequent children under 16 years in a family increases by 25 cents a week for each child so that the rate payable is \$1.75 a week for the fourth child, \$2.00 for the fifth child and so on.
- (f) Class B Widows' pension may also be payable to certain widows between 45 and 50 years of age.
- (g) Class C Widow's pension is generally payable for not more than 26 weeks immediately after the husband's death.
- (h) Where a person enrolled in the Pensioner Medical Service meets the funeral costs of another person enrolled in the Service, the maximum funeral benefit is \$40.00. A funeral benefit of up to \$20.00 is payable to other persons who meet the funeral costs of a deceased age or invalid pensioner who was enrolled in the Pensioner Medical Service at the time of death.
- (i) Under a proposal announced in the Budget Speech, a higher rate of sickness benefit will be payable to persons who have been in receipt of sickness benefit continuously for six weeks. The rate may be further increased for a person who pays rent and has little means other than the sickness benefit. Persons in hospital and who have no dependants will not qualify for these higher benefits.
- (j) Disabled persons may be given rehabilitation treatment, followed, where necessary, by vocational training. During the period of rehabilitation treatment, patients receive the appropriate pension or benefit, and while receiving vocational training they are paid a rehabilitation allowance. In addition a training allowance and, where appropriate, a living away from home allowance, are also payable, free of means test. Free vocational training, with associated allowances, may also be available to Class A and Class B widow pensioners.
- (k) A subsidy of \$5 a week is payable in respect of a person 80 years or more who receives approved personal care and who resides in hostel-type accommodation in an aged persons' home conducted by an eligible organisation under the *Aged Persons Homes Act*.

Age and Invalid Pensions

Generally pensions are payable to persons who have been resident in Australia, New Zealand or the United Kingdom for ten years in the case of age pensioners, and five years in the case of invalid pensioners. (Reciprocity agreements exist with New Zealand and the United Kingdom.)

The qualifying ages for age pensions are 65 years for men and 60 years for women; invalid pensions are payable to persons over 16 years of age who are permanently incapacitated for work. Additional allowances are payable for dependants under certain conditions.

For age and invalid pensions, the same means test on income and property operates. 'Means' can consist entirely of income, entirely of property, or any combination of them. The calculation of income excludes the pension itself, income from property, gifts from family, benefits from hospital and medical insurance schemes, child endowment, etc.; the property component excludes home, furniture, personal effects, the first \$400 of property and \$1,500 of surrender value of life policies, and the capital value of any life interest, annuity or contingent interest, etc. Blind persons, however, may receive the maximum rate of pension free of means test.

The sliding scale operates as follows: half the amount by which assessed means exceed the permissible minima in the table is deducted from the maximum rate pension. Property taken into account in calculating means as assessed is taken at 10 per cent to give an annual value. A single pensioner can therefore own property, in addition to exempt property, up to \$5,600 without reduction

of pension (10 per cent of [$\$5,600$ less $\$400$] = $\$520$), and up to $\$21,200$ before pension ceases (10 per cent of [$\$21,200$ less $\$400$] = $\$2,080$). With married pensioners, the corresponding lower and upper property limits are $\$9,640$ and $\$37,200$.

Free medical service and medicine are provided for pensioners and their dependants, and a concessional telephone rental equal to two-thirds of the amount otherwise payable is available to blind people, pensioners who live alone, and to certain others. Radio and television licences at a reduced rate are also available to these pensioners. Persons who became pensioners for the first time because of the introduction of the 'tapered' means test will not be eligible for membership of the Pensioner Medical Service or entitled to other subsidiary fringe benefits.

On the death of one of a married pensioner couple, the survivor receives six fortnightly instalments at the old rate before suffering reduction to the single rate.

Pensions are paid fortnightly by cheque posted to the pensioner's address.

Widows' Pensions

These were introduced by the Curtin Government in 1942. They were payable to widows who had been resident in this country, New Zealand or the United Kingdom for five years before claiming a pension. There is no residential qualification where the woman and her husband were living permanently in Australia before he died.

The classes of widows are as follows: (i) a Class A widow has one or more dependent or student children in her care; (ii) a Class B widow is at least 50 years of age, or 45 years when her Class A pension ceases (because she no longer has a child in her care); (iii) a Class C widow is under 50, without children, and in necessitous circumstances in the 26 weeks following her husband's death. The term 'widow' includes a deserted wife, a divorcee and a woman whose husband has been imprisoned for at least six months or is a patient in a mental hospital. Certain 'dependent females' may also qualify for pension.

In 1968, a widows' vocational training scheme was introduced (where participation in the work force was inhibited by the pensioner's lack of skill or training).

The following table shows, for Tasmania, the number and sex of persons receiving age, invalid and widows' pensions, and the amounts paid out in pensions and allowances:

Age, Invalid and Widow Pensioners and Payments

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Age and Invalid Pensions—						
Number of Age Pensioners (a)—						
Males	5,779	5,799	5,809	5,964	6,178	6,353
Females	13,024	13,093	13,372	13,626	14,233	14,676
Persons	18,803	18,892	19,181	19,590	20,411	21,029
Number of Invalid Pensioners (a)						
Males	1,966	2,055	2,027	2,086	2,065	2,231
Females	1,397	1,477	1,417	1,444	1,483	1,588
Persons	3,363	3,532	3,444	3,530	3,548	3,819
Amount of Pensions Paid \$'000	12,343	13,184	13,439	14,574	15,414	16,768
Widows' Pensions—						
Number of Pensioners (a)	2,109	2,248	2,327	2,432	2,588	2,678
Amount of Pensions Paid \$'000	1,467	1,699	1,791	1,983	2,125	2,465

(a) At 30 June.

Unemployment, Sickness and Special Benefits

Legislation for these benefits was introduced in 1944 by the Curtin Government and payments began in 1945. The minimum age is 16 years, the maximum 65 (male) and 60 (female). There are no nationality restrictions, but if a claimant has not been resident in Australia for one year before making the claim, the Department must be satisfied that he intends to live here permanently. Benefits are not payable to people qualified to receive invalid, age, widows' or service pensions, or tuberculosis allowances.

To receive unemployment benefit, a person must be out of work (but not through being a direct participant in a strike), must be capable of undertaking and willing to undertake suitable work; and have taken reasonable steps to obtain employment. Registration with the Commonwealth Employment Service is necessary; payment is at the discretion of the Department of Social Services.

Sickness benefit may be paid to a person temporarily unable to work because of sickness or accident, and who has suffered a loss of income because of this.

A special benefit may be granted to a person not qualified for a pension or an unemployment or sickness benefit if, because of age, physical or mental disability, domestic circumstances, or for other valid reasons, he is unable to earn a sufficient livelihood for himself and his dependants.

The following table shows, for Tasmania, the unemployment, sickness and special benefits granted, and the expenditure on each (together with weekly averages of those in receipt of each type of benefit):

**Commonwealth Unemployment, Sickness and Special Benefits
Beneficiaries and Payments**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Unemployment Benefits—						
Claims Granted .. no.	6,720	5,255	2,742	3,166	3,746	4,110
Persons on Benefit—						
At 30 June no.	1,399	926	433	526	635	600
Weekly Average .. no.	1,435	1,117	516	433	506	570
Benefits Paid \$'000	750	583	275	228	264	297
Sickness Benefits—						
Claims Granted .. no.	2,167	2,238	2,040	2,147	1,952	2,119
Persons on Benefit—						
At 30 June no.	289	272	298	267	291	242
Weekly Average .. no.	300	287	263	281	259	234
Benefits Paid \$'000	215	201	174	190	165	166
Special Benefits—						
Claims Granted .. no.	135	122	122	160	99	414
Persons on Benefit—						
At 30 June no.	129	120	115	102	87	147
Weekly Average .. no.	118	116	121	104	89	138
Benefits Paid \$'000	52	52	57	47	42	55
Total Benefits—						
Claims Granted .. no.	9,022	7,615	4,904	5,473	5,797	6,643
Persons on Benefit—						
At 30 June no.	1,817	1,318	846	895	1,013	989
Weekly Average .. no.	1,853	1,520	900	818	854	942
Benefits Paid \$'000	1,017	837	506	464	471	518

Maternity Allowances

Maternity allowances were introduced by the Fisher Government in 1912. There is no means test and any mother is entitled to a maternity allowance if she gives birth to a child in Australia and if she resides or intends to remain in Australia. It may also be paid in certain other cases, e.g. a birth on a ship proceeding to Australia. Payment is a *single grant* of \$30 where there are no other children; \$32 where there are one or two other children and \$35 where there are three or more children in the mother's care. The amount is increased by \$10 for each additional child in a multiple birth; \$20 of the allowance may be paid four weeks before the birth, and the balance soon after.

The following table shows payments in Tasmania:

Maternity Allowances

Particulars		1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Claims Paid During Year	no.	8,437	7,821	7,578	7,606	7,939	8,373
Amount Paid During Year	\$'000	272	251	243	243	254	267

Child Endowment

Child endowment was introduced by the Menzies Government in 1941, and is paid to persons or institutions having the care, custody and control of children under 16 years, or student children under 21. One year's residence in Australia is required if the mother and child were not born here, but this requirement is waived if the Department is satisfied they intend to remain here permanently.

The following table shows statistics of child endowment in Tasmania:

**Child Endowment
Children (including Students) Endowed and Payments**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Endowed Children and Students						
(a)—						
Children in Endowed Families						
no.	126,413	126,526	126,870	127,688	127,849	129,200
Children in Approved Institutions	483	521	401	499	432	436
Students	3,026	3,623	3,933	4,015	4,163	4,514
Total Endowed	129,922	130,670	131,204	132,202	132,444	134,150
Amount Paid During Year (b)						
\$'000	6,113	6,306	6,318	6,912	6,612	6,710

(a) Number at 30 June. Children, those under 16 years; students, 16 but under 21 years.

(b) In 1963-64 and 1966-67, five twelve-weekly payments were credited directly to bank accounts instead of the usual four.

Funeral Benefits

These were introduced by the Curtin Government in 1943 and provide for a payment of \$20 to the person meeting funeral costs following the death of an invalid or age pensioner, or of a tuberculosis sufferer otherwise qualified to receive a pension. The amount is increased up to \$40 where the claimant is himself a pensioner, or if the payment is in respect of the pensioner claimant's wife or child.

Pensioner Health Benefits and Tuberculosis Allowances

The pensioner medical service and tuberculosis allowances are described in this chapter under the heading 'Health'.

Commonwealth Rehabilitation Service

In 1941, the Curtin Government introduced provisions for the vocational training of invalid pensioners. In 1948, the Chifley Government provided for the rehabilitation of invalid pensioners and of unemployment and sickness benefit recipients. The Menzies Government in 1955 extended eligibility to persons receiving tuberculosis allowances and to children of 14 and 15 years who otherwise might qualify for an invalid pension at 16. In 1958, widow pensioners and people receiving special benefit were granted eligibility.

The Service aims to fit handicapped people for employment by supplying medical and hospital treatment, surgical aids and appliances, and where necessary, arranging special education and training courses in industry, public service, etc. Vocational counsellors arrange employment with suitable employers and follow up progress.

Rehabilitation training is given if the disability is a substantial handicap to engaging in full employment and if there are reasonable prospects of the person working within three years of starting treatment or training. Disabled people who do not qualify for free service may pay for rehabilitation themselves, or may be sponsored by private or government organisations. In Tasmania the Department's rehabilitation centre is located in Hobart.

The following table shows the numbers accepted for rehabilitation and placed in employment in Tasmania:

Operation of Commonwealth Rehabilitation Service

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Persons—						
Accepted for Rehabilitation no.	102	80	100	90	89	100
Placed in Employment.. no.	82	75	86	77	81	90
Expenditure (a) \$'000	44	60	54	60	58	70

(a) Excludes capital expenditure on sites and buildings, and administrative costs of the Rehabilitation Service.

Training Scheme for Widow Pensioners

In 1968, the Gorton Government introduced a training scheme to provide Class A and Class B widow pensioners with a vocational skill to enable them to undertake gainful employment. Training is limited to one year's duration; it may be either full-time or part-time, and generally it will be provided in business or technical colleges. This has necessitated special classes being organised by arrangement with the Tasmanian Education Department.

During training a widow continues to receive her pension, subject to normal conditions of eligibility, and in addition receives a training allowance of \$8 per fortnight plus fares re-imbursement. The Commonwealth pays all tuition fees, and in addition provides essential books and equipment during training up to a maximum of \$80.

Expenditure on this scheme for the remainder of the year 1968-69 amounted to \$5,824.

Homes for the Aged

Under the *Aged Persons Homes Act* 1954, the Menzies Government provided for subsidies, on a \$ for \$ basis, to approved organisations intending to build or acquire homes for aged persons. In 1957 the cost of land was allowed as part of the capital cost, and the Commonwealth contribution was increased to \$2 for \$1. The aim is the provision of conditions approaching ordinary domestic life ('Homes' in this context does not refer to houses built under the Commonwealth-State Housing Agreement). Eleven grants were made in 1968-69 totalling \$598,000, bringing the number of grants to 83 and expenditure in Tasmania to \$2.95m since the inception of the scheme.

Personal Care Subsidy

A subsidy of \$5 per week is payable in respect of a person of 80 years or more who resides in hostel-type accommodation in an aged persons' home eligible under the *Aged Persons Homes Act* 1954.

Sheltered Workshops

The Commonwealth *Sheltered Employment (Assistance) Act* 1967 incorporated the *Disabled Persons Act* 1963. The Act's object is to foster and encourage the development of sheltered workshops for disabled people who, on medical grounds qualify, or who may later qualify, as invalid pensioners; to provide such persons with work experience, and the opportunity to earn to the limit of their capabilities for work done, the hope being that some may graduate to normal employment in the future.

Assistance is given by a \$2 for \$1 subsidy towards: (i) the capital cost of erection or addition to workshops; (ii) the accommodation of people engaged in sheltered employment; (iii) the rental for up to three years of premises used to provide sheltered employment; (iv) the cost of workshop equipment.

During 1968-69, nine equipment grants totalling \$8,141 were made; total expenditure in Tasmania, since inception of the scheme to 30 June 1969, was \$239,666.

State Department of Social Welfare*Expenditure*

Activities of this State Government Department are grouped under Child Welfare and Relief. The following table shows expenditure over a five-year period:

Department of Social Welfare—Expenditure
('\$000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Administration and General ..	196	213	250	303	411
Relief Division	167	157	167	189	259
Child Welfare Division ..	177	178	210	222	300
Ashley Home for Boys ..	82	88	93	105	(a)
Grants to Organisations ..	110	94	78	85	109
Total	732	730	798	904	1,079

(a) 1968-69 figures not available; are included under Administration and General, and Child Welfare Division.

In 1968-69, the major expenses were: under Relief Division, fuel allowances for eligible pensioners, \$80,000 and relief and maintenance, \$171,000; under Child Welfare Division, maintenance of boarded-out children, \$119,000 and contributions towards maintenance of children in approved institutions, \$95,000; and under Grants to Organisations, Tasmanian Institute for Blind and Deaf, \$86,000.

Relief Division

The functions of this Division are to investigate applications for assistance from needy mothers with dependent children and to give cash relief where necessary; to issue fuel allowances (subject to a means test) to aged and invalid pensioners; and to help pay for funerals, transport, furniture removals and artificial limbs, spectacles, etc. for persons in indigent circumstances. Special grants are made to deserted wives (and sometimes deserted husbands) left with children, wives with husbands in gaol, to certain persons awaiting receipt of Commonwealth benefits or pensions, and to relatives supporting deserted children.

Child Welfare Division

The work of this Division includes the investigation of complaints that children are neglected or inadequately controlled; the supervision of neglected children in their own homes to avert the need for more drastic action; the investigation of cases to appear in Children's Courts; the supervision of children under order of the Court; the placement and supervision of children declared by the Court to be wards of the State; the control of the Department's receiving and other homes; the recovering of maintenance costs, where possible, from parents of children who are a charge on the Department; the licensing and supervision of children's boarding homes and day nurseries; the supervision of child migrants; welfare of children referred by Courts in divorce actions.

Domestic aid can be provided where because of illness, a mother is unable to undertake her normal duties, or where lack of domestic help would cause hardship. Housekeeper help was supplied on 11 occasions in 1968-69 at a net cost of \$3,000. Where it is not possible to provide domestic assistance temporary accommodation can be provided at Rochembank Hostel or other suitable residences.

Adoption of Children: Women child welfare officers investigate applications by prospective adoptive parents and interview mothers wishing to place their children for adoption. Applications for adoption of children are heard by a magistrate. There were 348 orders for adoption made in 1968-69.

Children's Court Statistics

In Tasmania, a child cannot be prosecuted without his case having first been referred to a welfare officer for investigation and a recommendation having been made. In 1968-69, 104 children originally referred to welfare officers with a view to proceedings were not brought before Children's Courts; the following table shows the ages and sex of children *reported* in that year (but not necessarily involved in Children's Court proceedings):

Children in Police Reports (a), 1968-69
Classified by Age and Sex

Sex	Age (in Years)										Total
	Under 8	8	9	10	11	12	13	14	15	16	
Boys	31	22	25	40	70	88	151	209	288	596	(b)1,520
Girls	29	1	3	6	14	17	18	22	28	32	170
Total	60	23	28	46	84	105	169	231	316	628	1,690

(a) Police reports made to district child welfare officers with a view to prosecution. A child reported twice, or more than twice, will appear twice or more in the table.

(b) Includes 34 boys who were 17 when the police reports were filed but were sixteen at time when the offences were committed.

Children's courts are established to hear cases involving persons under the age of 17 years. If proceedings are instituted, a child's parent has the right to be heard and to examine and cross examine witnesses, or to be represented by counsel; also a parent can be compelled to attend the hearing if this imposes no unreasonable inconvenience. For the powers of children's courts, see a later section under 'Courts Having Jurisdiction in Tasmania'.

The offences for which children were reported over a five-year period are shown in the following table. Where a report concerned multiple offences the apparently more serious one has been listed.

Children in Police Reports (a)
Classified by Offence

Offence Alleged	1964-65	1965-66	1966-67	1967-68	1968-69
Damage to Property	94	109	97	135	99
Breaking, Entering and Stealing	211	249	224	346	326
Stealing	262	296	343	404	426
Receiving	7	29	18	24	12
Illegal Use of Vehicle	61	75	109	125	59
Offences Involving Fraud ..	6	8	8	9	14
Sex Offences	12	16	16	21	11
Other Offences Against the Person	18	9	7	24	41
Offences Against Decency ..	13	10	11	24	32
Relatively Serious Offences	684	801	833	1,112	1,020
Disorderly Conduct	29	51	63	48	32
Traffic Offences	83	105	128	162	185
Breaches of Licensing Laws ..	96	176	224	311	331
Breaches of By-Laws	18	24	26	27	7
Firearm Offences	43	27	31	46	42
Other Offences	269	383	472	594	597
Appearing as Uncontrolled ..	38	28	33	19	19
Appearing as Neglected	79	42	65	89	73
Breaches of Supervision	6	3	10	10	15
Complaints under Child Welfare Act	123	73	108	118	107
Total	1,076	1,257	1,413	1,824	1,724

(a) See note (a), previous table.

In the previous tables, a child may appear more than once if more than one report has been made. The following table shows the number of children found guilty of an offence or against whom a complaint has been proven; the basis for inclusion is different from that in the two earlier tables: (i) a child found guilty at two or more appearances is only counted once; (ii) a child found guilty of more than one offence is classified under the more serious.

Individual (a) Children: Findings of Guilty or Complaint Proven, 1968-69

Sex	Relatively Serious Offences (b)	Other Offences (b)	Complaints under Child Welfare Act (b)	Total
Boys	513	303	40	856
Girls	72	27	50	149
Total	585	330	90	1,005

(a) See paragraph before table for definition of 'individual'.

(b) See previous table for classification of offences and complaints.

Wards of the State and Supervised Children

Children are made wards of the State either on application of a parent or relative (e.g. in the case of both parents' death or desertion) or by a Court order. Children may remain wards until they reach the age of eighteen and in some cases wardship can be extended to the age of twenty-one. Often wards, while under the supervision of a welfare officer, are returned to their home and in such cases wardship is frequently terminated; as it is with those who successfully take up employment.

At 30 June 1969 there were 1,160 children under State control or supervision. Three hundred and thirteen of these children were under legal supervision of child welfare officers as a result of Court imposed supervision orders and 847 children were wards of the State. The next table shows the location of the wards at 30 June and admissions to and discharges from wardship during the year.

**Wards of the State: Location, Admissions and Discharges
(Number)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Location at 30 June—					
In Departmental Homes	93	82	87	112	92
In Other Children's Homes	183	190	191	179	196
In Foster Homes	296	261	277	282	356
With Parents or Relatives	126	139	137	176	113
In Private Lodgings	59	64	60	54	63
Other (a)	14	35	32	24	27
Total	771	(b) 771	784	827	847
Children Made Wards During the Year—					
By Courts—Delinquent	68	43	58	60	69
Neglected	35	33	32	40	43
On Parents' or Guardians' Request—					
Neglected (Uncontrolled) (c)	2	2	1	(b) 9	6
Deserted, or Parents Unable to Provide (d)	32	24	45	(b) 56	65
Total	137	102	136	165	183
Children Ceasing to be Wards During the Year—					
Adopted	29	15	18	20	35
Supervision Not Needed, Age, etc. ..	107	115	105	102	128
Total	136	130	123	122	163

(a) Children in hospitals, other government institutions, missing, etc.

(b) Not strictly comparable with previous year's figure; series revised.

(c) Neglected—unfit for guardianship.

(d) Destitute and/or homeless.

Wards are placed in: (i) foster homes (mostly ordinary family homes); and (ii) children's homes (private and Departmental). The Department makes payments, based on the child's age, for wards in foster homes and contributes to non-departmental institutions for the maintenance of State wards.

Approved children's homes and foster-homes are assisted with major items of clothing. The Department accepts responsibility for hospital expenses and cost of dentistry for wards of State where this treatment is not available from school dental or hospital services. Optical expenses are also met where necessary. Pocket money, varying from 5 cents to 50 cents per week, is provided for children in foster-homes. Assistance at a rate of \$2.50 per week also is available in respect of certain non-wards, who are orphans or abandoned in the care of the managers of approved children's homes. Contributions are also made to approved children's homes towards the maintenance of children without other means of support admitted at the direct request of other State Government Departments. The maximum rate payable is \$8.25 per child per week.

The Department's six receiving homes at Hobart, Launceston and Wynyard are conducted by married couples who receive payment according to the foster-home scale for children in residence. They provide a useful service by giving temporary accommodation for children.

The next table shows government expenditure on wards of the State.

Wards of the State: Government Expenditure
(£'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Expenditure on Departmental Homes ..	r 182	r 211	r 222	227	240
Maintenance of Children—					
In Foster Homes	93	98	103	119	134
In Non-Departmental Homes	61	71	78	95	97
Total Expenditure	r 337	r 381	r 404	441	471

Departmental Homes: State receiving homes which provide temporary accommodation for children are maintained at Hobart, Launceston and Wynyard. Also, in Hobart, a hostel provides accommodation for older boys who have left school and need to be established in employment.

Ashley Homes for Boys, Deloraine, provides care and training for older wards who, because of maladjustment or delinquency, require special institutional control. Wybra Hall (Mangalore) fulfils a somewhat similar function with the special adaptations necessary to cater for younger boys between the ages of nine and fourteen years, as does West Winds at Woodbridge.

Weeroona Girls' Training Centre (Latrobe) provides for those adolescent girls in the care of the Department who require special institutional supervision and training. Girls of school age attend schools in the district and others receive correspondence school education. Older girls are trained in various aspects of domestic work.

Non-Departmental Homes: Other children's homes in which wards are placed are Kennerley Boys' Home, Salvation Army Boys' Home, Salvation Army Girls' Home, Aikenhead House, Bethany Boys' Hostel, Mt St Canice Convent and Hillcrest, all in Hobart; Savio College and Yalambec Hostel, Glenorchy; Clarendon Home, Kingston; Girls Home, and Northern Tasmanian Home for Boys, Launceston; and Roland Boys' Home Sheffield.

REPATRIATION SERVICES AND PENSIONS

General

The Repatriation Department was established as a Commission under Federal legislation in 1920. The term 'repatriation' does not adequately describe the Department which is responsible for: (i) the payment of war and service pensions to eligible ex-servicemen and women and their dependants; (ii) the provision of medical treatment to ex-servicemen and women for injuries and illnesses caused or aggravated by their war service; (iii) the provision of medical treatment to widows and dependants of deceased ex-servicemen whose deaths are due to war service; and (iv) the provision of medical treatment in certain circumstances to ex-servicemen and women who are suffering from injuries and illnesses not caused or aggravated by war service.

Benefits are provided in respect of service in the 1914-18 and 1939-45 Wars, in the Korea and Malaya operations, with the British Commonwealth Far East Strategic Reserve, and the Special Overseas Forces; more recently, benefits have been extended to ex-servicemen from the Vietnam theatre of operations.

Medical Services

To discharge these functions in Tasmania, the Repatriation Department maintains a branch office, a repatriation general hospital and an artificial limb and appliance centre in Hobart. Facilities exist at the Repatriation General Hospital for medical treatment of hospitalised patients, and specialist services for out-patients. Generally, treatment for out-patients throughout the State is provided by doctors the Department has appointed as Local Medical Officers. People entitled to treatment can select a doctor from the panel of L.M.Os and receive treatment at the Department's expense. Payment for treatment in hospitals other than the Repatriation General Hospital is met by the Department in certain circumstances.

Repatriation Pensions—General

War pensions are payable, without general application of a means test, for war-caused or war-aggravated disabilities. Service pensions are payable, in the main, to certain ex-servicemen 60 years and over (and ex-servicewomen 55 years and over) subject to a means test; no disability need be claimed.

War Pensions

Eligibility and Rates

War and dependant's pensions may be granted to persons, or to dependents of persons, who come within the following categories and who suffered death or disability: (i) arising from any occurrence before discharge, or overseas war service or on service in Australia within certain areas; (ii) attributable directly to service where the member served only in Australia; (iii) from pulmonary tuberculosis where the member served in any theatre of war; and (iv) from aggravation of a condition existing at enlistment where camp service exceeded six months.

Those who receive war pensions are also eligible for free medical and hospital treatment for their pensionable disabilities. With certain categories of pensioners, the eligibility for free treatment is widened to cover all disabilities. It is also possible for an ex-serviceman to qualify for free treatment for a disability without necessarily being granted a pension. The rates current after the 1969 Federal Budget are given in the accompanying table which also lists the main Repatriation benefits and the variations proposed in the 1970-71 Budget.

Repatriation Benefits
(\$ per week)

Benefit	Rate		
	Existing 1969-70	Proposed 1970-71	Increase

PAYABLE WITHOUT MEANS TEST			
Special Rate Pensions (a)—			
Member	36.00	38.00	2.00
Wife	4.05	4.05	..
Each Child	1.38	1.38	..
Intermediate Rate Pensions (b)—			
Member	26.50	28.00	1.50
Wife	4.05	4.05	..
Each Child	1.38	1.38	..
General Rate Pensions (c)—			
Member	12.00	12.00	..
Wife	max. 4.05	max. 4.05	..
Each Child	max. 1.38	max. 1.38	..
Special Compensation Allowances (d)—			
Members with 75 per cent to 100 per cent assessed incapacity	3.75 to 5.00	4.50 to 6.00	0.75 to 1.00
War Widows (e)—			
Pension	15.00	15.50	0.50
Domestic Allowance	7.50	8.00	0.50
War Orphans' Pensions (f)—			
One parent dead—			
First child	5.40	6.00	0.60
Each other child	4.25	5.00	0.75
Both parents dead—			
Each child	10.15	12.00	1.85
Attendants' Allowances (g)—			
Higher Rate	14.00	14.00	..
Lower Rate	8.50	8.50	..
Education and Training Allowances (payable under Soldiers' Children Education Scheme) (h)—			
General Education—			
Age 12 up to 14 years—			
Living at home	2.18	2.18	..
Living away from home	7.28	7.28	..
Age 14 up to 16 years—			
Living at home	3.30	3.30	..
Living away from home	7.28	7.28	..
Age 16 up to 18 years or matriculation—			
Living at home	7.28	7.28	..
Living away from home	11.25	11.25	..
Agricultural Education—			
Living away from home	3.65	3.65	..
Industrial Education—			
Living at home	2.65	2.65	..
Living away from home	5.30	5.30	..
Professional Education—			
Living at home	11.93	11.93	..
Living away from home	19.23	19.23	..
Funeral Benefits—			
Towards the funeral expenses of certain classes of deceased ex-servicemen and eligible dependants	50.00 { lump max. { sum	50.00 { lump max. { sum	..
Towards the cost of transportation of the re- mains of certain ex-servicemen	30.00 { lump max. { sum	30.00 { lump max. { sum	..

Repatriation Benefits—*continued*

(\$ per week)

Benefit	Rate		
	Existing 1969-70	Proposed 1970-71	Increase
Recreation Transport Allowances (i)—			
Higher Rate	25.00 a month	25.00 a month	..
Lower Rate	12.50 a month	12.50 a month	..
Allowance for Maintenance of Gift Car (j) ..	300.00 a year	300.00 a year	..

MAXIMUM RATES PAYABLE SUBJECT TO MEANS TEST

Service Pensions (£)—			
Member—Single	15.00	15.50	0.50
Married	13.25	13.75	0.50
Addition for first child	2.50	2.50	..
Addition for each other child	3.50	3.50	..
Wife's Pension (if not a pensioner) (l)	7.00	7.00	..
First child (if no addition to member's pension paid)	2.50	2.50	..
Each other child (up to fourth child)	0.25	0.25	..
Guardians' Allowances—			
Where there is a child under 6 years or an invalid child requiring full-time care	6.00	6.00	..
Other cases	4.00	4.00	..

- (a) Special rate pension (commonly referred to as the T.P.I. pension) is granted where an ex-serviceman, because of incapacity accepted as due to war service, is totally and permanently incapacitated—that is, to such an extent as to be precluded from earning other than a negligible percentage of a living wage—or has been blinded as a result of war service. Where an ex-serviceman is only temporarily totally incapacitated, an amount equal to the special rate pension is payable only for the period for which he is so incapacitated. It may also be granted under certain conditions to an ex-serviceman who is suffering from pulmonary tuberculosis.
- (b) Intermediate rate pension is payable where an ex-serviceman, because of the severity of his war-caused disabilities, can work only part-time or intermittently and therefore is unable to earn a living wage.
- (c) General rate pension is payable to an ex-serviceman whose war-caused disabilities do not prevent him from working, although they may reduce his earning capacity. Pension from 10 per cent to 100 per cent of the maximum general rate is payable according to the degree of incapacity as assessed by a Repatriation Board, the Repatriation Commission or an Assessment Appeal Tribunal. An additional pension (but not so that the total pension exceeds the rate of special pension) is payable for certain disabilities—mainly in respect of amputations. The amount of additional pension payable varies with the severity of the amputation.
- (d) A 'Special Compensation Allowance' is payable to certain general rate pensioners with assessed incapacity ranging from 75 per cent to 100 per cent.
- (e) Pension is payable to the widow of an ex-serviceman whose death has been accepted as due to his war service or who has died from causes not due to war service but was receiving, at the time of his death, or is later adjudged to have been entitled to receive, the special rate of war pension, one of the rates payable to double amputees or one of the special rates payable in respect of tuberculosis.

Domestic allowance is also payable to a war widow if she has a dependent child or children under 16 years, or is 50 years of age or over, or is permanently unemployable or has a child 16 years or over who is undertaking education or training approved by the Department and who, in the opinion of the Department, is not receiving an adequate living wage.

- (f) War orphans' pensions are paid for the children of an ex-serviceman whose death occurred in circumstances similar to those mentioned in (e) above. The pensions continue until the children attain 16 years.

- (g) An allowance for an attendant is payable to an ex-serviceman: (i) at the higher rate if he has two arms amputated; or been blinded and also afflicted with total loss of speech or total deafness; (ii) at the lower rate if he has two legs and one arm amputated; or has certain double amputations above the knees; or been blinded; or is deemed by the Repatriation Commission to be blinded and in need of an attendant; provided the disabilities are due to war service.
- (h) Children of ex-servicemen are eligible under the Soldiers' Children Education Scheme where the ex-serviceman: (i) died as a result of war service; (ii) is receiving a special rate pension; (iii) died from causes not due to war service but was receiving, at the time of his death, or is later adjudged to have been entitled to receive, the special rate of war pension, or one of the rates payable to double amputees, or one of the special rates payable in respect of tuberculosis; (iv) is blinded as a result of war service; (v) is suffering from tuberculosis and is receiving a pension equal to the special rate and is likely to remain in receipt of such pension for a period of three years.
- (i) An allowance for recreation transport, at the rates shown, may be payable to certain classes of seriously disabled ex-servicemen, the rate of allowance depending on the degree of loss of locomotion. Under a proposal announced in the Budget Speech eligibility for the recreation transport allowance, at the lower rate, will be extended to the totally war blinded.
- (j) A motor vehicle may be issued as a gift to certain classes of seriously disabled ex-servicemen and an allowance, at the rate shown, may be payable towards the upkeep of the vehicle.
- (k) Service pension, which is broadly the equivalent of the age and invalid pensions payable to civilians, is payable, subject to a means test, to an ex-serviceman who:
 is suffering from pulmonary tuberculosis; or
 has served in a theatre of war (or in the case of a woman, served abroad or embarked for service abroad) and has attained, if a man, the age of 60 years, or if a woman, 55 years; or is permanently unemployable.

Where a service pension is granted to an ex-serviceman on the grounds that he is permanently unemployable or suffering from pulmonary tuberculosis, or if there is an eligible child, service pension may also be paid to his wife and the first four eligible children, but the amount for a first child is normally paid as an addition to the ex-serviceman's pension.

Where the ex-serviceman's wife is receiving a social service pension, a tuberculosis allowance or a service pension as a 'member of the forces', the rate payable to him is the married rate unless, because of illness or infirmity of either or both of them, they cannot live together in a matrimonial home.

Guardian's allowance may be payable to a service pensioner who is unmarried, widowed, divorced or married but separated and who has the custody, care and control of a child.

Supplementary assistance at a maximum rate of \$2.00 a week is payable, subject to a means test:

- to a single pensioner who pays rent; or
 - to a married service pensioner who pays rent provided his spouse is not receiving a pension from the Department of Social Services, a tuberculosis allowance or a service pension as a 'member of the forces'; or
 - to a married service pensioner whose spouse is receiving a social service pension, a tuberculosis allowance or a service pension as a 'member of the forces' and who is unable to live with his spouse in a matrimonial home because of the illness or infirmity of either or both of them.
- (l) Wife's pension is payable, subject to a means test, to a wife who is not in receipt of a pension (other than unemployment, sickness or special benefit) from the Department of Social Services or a service pension as an ex-servicewoman, if the service pensioner is permanently unemployable, suffers from pulmonary tuberculosis or has a child.

War Pension Payments

The following table shows, for Tasmania, the number of pensions in respect of ex-servicemen and their dependants, together with expenditure on war pensions:

War Pensions—Pensioners and Payments

Year	Number of Pensions Current at 30 June				Expenditure During Year (c)
	Incapacitated Ex-Servicemen	Dependants of—		Total (b)	
		Incapacitated Ex-Servicemen	Deceased Ex-Servicemen (a)		
1962-63	8,620	17,763	1,831	28,214	\$'000 5,668
1963-64	8,659	17,366	1,879	27,913	6,158
1964-65	8,627	16,506	1,968	27,109	6,214
1965-66	8,623	15,831	1,984	26,446	6,919
1966-67	8,573	15,018	2,031	25,629	6,654
1967-68	8,610	14,324	2,073	25,015	6,790
1968-69	8,644	13,731	2,100	24,485	7,622

(a) Includes war widows' pensions.

(b) Includes miscellaneous pensions not specified under the 'ex-servicemen' details, e.g. Seamen's War Pensions and Allowances.

(c) Includes widows' allowances.

At 30 June 1969, the proportion of ex-servicemen in Tasmania receiving war pension in respect of service in the 1914-18 War was 14.9 per cent; the 1939-45 War, 82.7 per cent; the Korea and Malaya operations, 1.3 per cent, and other operations, 1.1 per cent.

Service Pensions

Eligibility and Rates

Service and dependant's pensions may be granted to persons (or to dependants of persons) who come within the following categories, and satisfy a means test: (i) men aged 60 or over who served in a theatre of war, or women 55 years and over who served abroad; (ii) men and women who are totally unemployable with similar service particulars; (iii) sufferers from pulmonary tuberculosis not qualifying for a war pension on this ground. The conditions governing the means test are the same as for old age pensions, described earlier in this chapter.

Service Pension Payments

The following table shows, for Tasmania, the number of service pensions in respect of ex-servicemen and their dependants, and expenditure on pension payments:

Service Pensions—Pensioners and Payments

Year	Number of Pensions Current at 30 June				Expenditure During Year
	Ex-Servicemen	Dependants of—		Total	
		Living Pensioners	Deceased Pensioners		
					\$'000
1963-64	1,739	777	144	2,660	874
1964-65	1,737	776	145	2,658	904
1965-66	1,709	827	101	2,637	964
1966-67	1,694	833	111	2,638	935
1967-68	1,689	898	107	2,694	1,014
1968-69	1,712	791	107	2,610	1,093

Soldiers' Children Education Scheme*Eligible Children*

Educational assistance is granted to ex-servicemen's children in particular circumstances: (i) if the parent has died from causes attributed to war service, or was receiving war pension for specific serious disabilities at the time of death; (ii) if the parent, as a result of war service, is blinded, totally and permanently incapacitated or receiving the special rate pension for pulmonary tuberculosis.

Benefits

For children under 12 years, the scheme pays the cost of school requisites and fees. At secondary level, fortnightly maximum payments are: under 14 years, \$4.35; 14 but under 16, \$6.60; 16 years and over, \$14.55 if both parents living and \$17.40 if only one parent living. At tertiary level, those living at home may receive \$23.85 per fortnight and those living away from home, \$38.46. For tertiary and professional courses, students may receive grants to pay for text books and equipment, fees and fares. The means test used to determine whether the maximum shall be paid does not relate to the parents' income but takes into account grants the student is receiving from scholarships, cadetships, etc.

HEALTH**State Health Services—General***Organisation, Department of Health Services*

The State Department of Health Services is responsible for the maintenance of the health of the community, the prevention of disease and the provision of government hospital and medical services. The Department is under the jurisdiction of the Minister for Health, with the Director-General of Health Services as its permanent head. The headquarters of the Department controls two Divisions, each under a director, namely Public Health and Tuberculosis. Three specialised services are also part of the Department, the State Health Laboratory under the control of the Director of Pathology; the Government Analyst and Chemist Laboratory, under the control of the Government Analyst; and Cardio-Vascular Services, under the control of a Director.

Legislation in 1967 provided for the establishment of a Mental Health Services Commission, thereby removing responsibility for psychiatric services from the Director-General. The Commission began to operate as a separate authority from July 1968 and is directly responsible to the Minister.

Headquarters Division*General*

The responsibility of the Headquarters of the Department of Health Services includes: the public hospital services and the licensing of private hospitals and other medical establishments under the *Hospitals Act* 1918; the District Medical Service; the School Dental Service; the Tourist and District Nursing Service; legislation concerned with health and allied matters; the Nurses' Registration Board and the Dental Mechanics' Registration Board; some specialist medical services; the State Drug Advisory Committee; liaison with the Health Departments of other States and the Commonwealth (the Director-General is a member of the National Health and Medical Research Council); liaison with professional, medical, dental and nursing associations. The Director-General is the controlling authority under the Hospital Em-

ployees' Award, the Medical Officers Award and the Nurses' (Public Hospitals) Award. Headquarters also controls and maintains Crown property occupied by the various sections of the Department and deals with the appointment and salaries of staff who are not officers of the Public Service.

Expenditure

Expenditure from Consolidated Revenue for a five-year period is as follows:

Department of Health Services—Expenditure from Consolidated Revenue (\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Administration, Head Office	212	212	235	252	254
Hospital and Medical Services—					
Administration	170	183	184	213	214
Grants to Hospitals	5,233	5,842	6,390	6,619	8,087
Medical Services—Country Districts	77	126	137	149	146
District Nursing Service	161	168	184	189	22
Dental Health Service	144	236	330	459	490
State Laboratory—Pathology	4	5	6	4	4
National Fitness Section	38	42	44	54	58
Nurses' Registration Board	4	4	4	5	9
Government Analyst and Chemist	43	51	53	65	77
St John's Park Hospital	847	944	1,052	1,191	1,261
Public Health—					
Administration and Inspectors	149	148	159	184	213
School Health Service	94	110	115	143	150
Child Health Service	126	134	148	161	173
Mothercraft Home	65	73	78	86	95
Tuberculosis Division—					
Administration	155	157	168	174	184
Chest Hospitals	305	295	313	325	210
Psychiatric Services—					
Administration	106	112	111	168	(a)
Mental Health Hospitals	1,503	1,689	1,903	2,167	(a)
Miscellaneous Grants and Expenses	258	286	(b) 322	(b) 452	(b) 401
Total	9,694	10,816	11,937	13,058	12,048

(a) Administered by Mental Health Services Commission from 1 July 1968.

(b) Includes Royal Commission on fluoridation of water supplies: 1966-67, \$15,000; 1967-68, \$22,000; 1968-69, \$2,000.

School Dental Health Service

This service, available free to children attending school, aims to examine and treat every child each six months, but continued staff shortages have prevented this from happening. At the end of June 1970, 27 permanent clinics were operating at urban centres throughout the State while 23 mobile units provided services in most country districts.

An orthodontic service is based in Hobart; mobile and permanent clinics give a State-wide therapeutic service.

Dental Nursing: Adopting the New Zealand system, Tasmania became the first Australian State to develop a School of Dental Nursing. Ten first-year and ten second-year State students are being trained, together with some students on behalf of the Commonwealth Government (these are to be employed in A.C.T. after graduation). Three classes have graduated since January 1968 after two-year courses, and the graduates have been appointed to clinics. The School, with a residential hostel attached is located in Hobart, has a principal, vice-principal and a matron, and in itself treats 90 patients a day.

It is expected that a total of approximately 30 dental nurses will work in the districts; a recognised dental nursing certificate will be needed for a nurse to be appointed to such a field position.

Fluoridation

In 1953, Beaconsfield became the first municipality to add fluoride to its water supply; fluoridation was extended to the Launceston water supply in 1961; and in 1964, Hobart became the first Australian capital city to add sodium fluoride to its water supply. The whole question of fluoridation was considered by a Royal Commission which reported favourably in 1968 and recommended its extension throughout the State. Following the Royal Commission's report, the State Government passed the *Fluoridation Act* 1968 setting up a fluoridation Committee which has the power to recommend fluoridation of any public water supply.

District Medical Service

In 1937, the Government undertook to help the more remote municipalities obtain medical services; at present, participating municipalities levy a rate under the *Local Government Act* 1962 as amended, and meet between one-half and one-third of the cost of the scheme.

The scheme provides a general practitioner service free to all residents of the municipality for consultations and home visits. A surgery is usually attached to the district medical officer's house, and branch surgeries are sometimes located elsewhere within the district. Attention out-of-hours is charged for in accordance with a set scale, as are insurance medical examinations, compensation treatment and attention to visitors to the State.

As well as general practice, activities include the dispensing of drugs if no chemist is available; duties as Medical Officer of Health (under the *Public Health Act*) if a municipal council requests it; in some cases, duty as superintendent, if there is a district hospital within the municipality; attention to district nursing hospitals; and post mortem examinations.

Pharmaceutical Services Section

The Pharmaceutical Services Section has numerous advisory, supervisory and research functions under the *Pharmacy Act* regulations and legislation relating to narcotics, poisons, dangerous and therapeutic drugs.

Alcohol and Drug Dependency Board

This Board was established under the *Alcohol and Drug Dependency Act* 1969: its members are appointed by the Minister for Health from the medical pharmaceutical, social service, police and legal professions. Its functions include (i) to keep under review all matters relating to the prevention and treatment of alcohol and drug dependency; (ii) to advise in the declaration and control of substances as drugs under the Act; (iii) to act as a board of appeal for applications by patients for discharge.

The treatment and rehabilitation of sufferers of alcohol and drug dependency is handled by the Mental Health Services Commission: the Commission's acute psychiatric units at Wynyard, Devonport and Launceston and the Royal Derwent Hospital have been declared treatment centres.

State Drug Advisory Committee

This advises on the nature, strength and variety of drugs to be supplied to public hospitals and institutions by the medical store of the Supply and Tender Department. It is not concerned with administration but helps the store to avoid stocking drugs with different brands but similar properties, and stocking drugs not likely to be required.

Nursing

Nursing training is under the control of the Nurses' Registration Board. Of the State's nursing training schools, eight are general, six midwifery, two psychiatric, two child health, one tuberculosis and one geriatric. There are nine general and one psychiatric training schools for auxiliary nurses (nursing aides).

Tourist Nursing Service

This service is based on the fact that trained nursing sisters from outside Tasmania like to visit the State and have a working holiday. These 'tourist nurses' are employed for short periods in hospitals or district nursing centres. Not more than two months' service at any one time is required of a sister in any one place but she may stay longer.

Division of Public Health

General

The Division of Public Health has responsibility for the preventive medical services of the State. The Director is responsible for the operation of the *Public Health Act* 1962 (as amended) and the control of medical officers of health and other health officers employed by the Department and municipalities throughout the State. A major responsibility is public immunisation programmes, conducted through the municipalities; preparations distributed include the Sabin anti-poliomyelitis vaccine and the Triple Antigen vaccine (against whooping cough, tetanus and diphtheria). The Division is responsible for the Nutrition Advisory Service; industrial hygiene; environmental sanitation; pure food and pure drug quality control; the public health aspects of the building regulations. Other major functions are discussed separately in the following sections.

Child Health Service

Child health nurses attached to child health centres advise mothers on the care and upbringing of their babies and younger children. In 1969 there were 98 centres and 13 travelling units. Voluntary child health committees working for the centres raise money for furnishings and equipment in buildings erected by the Department. The functions of the centres include examination of babies, maintenance of individual histories, and advice on diets, feeding techniques and hygiene. Phenistix tests are carried out for the detection of phenylketonuria, a rare complaint which results in mental deficiency if not treated in infancy. New-born babies are visited in their homes by the sisters; details of births and addresses are supplied by the hospitals.

The Mothercraft Home: This Home, located in Hobart, provides training for qualified nursing sisters who want to gain child health nursing certificates and for women who want to become mothercraft nurses. It accommodates children under two years who need care or who cannot be looked after at home, and mothers learning to look after children or having feeding problems. When space is available, children under two years can be boarded in the Home for short periods.

School Health Service

This is available free to children under 16 years at both State and non-government schools. The aim is for an annual inspection at each school by a medical officer, but staff shortages have limited this to examinations at school entry, next at 11, and finally at 15 years. Children requiring review or examination for any condition causing concern are also examined by school doctors.

Doctors particularly look for conditions likely to affect a child in a school situation. Parents can make appointments for their children to be examined at centres in Hobart, Launceston, Devonport and Burnie.

School nursing sisters visit schools regularly to supervise the health and hygiene of pupils. They maintain medical records, perform cleanliness inspections, test sight and hearing, assist at medical examinations and follow-up defects notified. They contribute to health education, research projects and may organise immunisation sessions at their schools.

Infectious Diseases

Certain diseases are notifiable under the *Public Health Act*, the aim being to prevent or check their spread. New regulations (November 1967) deleted Scarlet Fever, Rubella and Infantile Diarrhoea from the list and added Serum Hepatitis, food poisoning in two or more associated cases, Ornithosis, Salmonella infections and Shigella infections.

Special conditions apply to venereal diseases. Persons suffering from them must not marry until cured, or engage in the manufacture or distribution of foodstuffs, and are liable to arrest and detention if failing to continue treatment until cured.

Quarantine provisions and tuberculosis are dealt with in later sections.

The following table shows the incidence of infectious diseases in Tasmania for a five-year period:

**Infectious Diseases Notified to Department of Health Services
Number of Cases**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Ankylostomiasis .. .. .	..	..	1	..	..
Bacillic Dysentery	1	1	5	..	..
Brucellosis .. .. .	..	1	..	..	2
Diphtheria	3	1	..	..	1
Encephalitis .. .. .	..	..	1	..	..
Food Poisoning in Two or More Associated Cases .. .. .	..	..	..	4	..
Gonorrhoea	200	200	190	209	117
Hydatids	21	7	13	17	8
Infantile Diarrhoea and Enteritis	21	29	24	15	..
Infectious Hepatitis	293	172	276	569	552
Malaria .. .. .	..	3	6	..	..
Meningitis	14	4	6	1	..
Nephritis	6	12	5	1	..
Ornithosis .. .. .	..	..	..	1	..
Poliomyelitis .. .. .	..	3	..	..	1
Puerperal Fever .. .. .	..	..	1	..	..
Puerperal Pyrexia .. .. .	..	..	1	..	..
Rheumatic Fever	26	27	27	5	..
Rubella	107	448	219	55	..
Salmonella Infections .. .. .	..	..	..	1	16
Scarlet Fever	867	1,207	206	39	..
Serum Hepatitis .. .. .	..	..	..	1	..
Shigella Infections .. .. .	..	..	..	15	27
Syphilis	7	2	7	9	3
Tuberculosis	81	66	61	54	60
Typhoid Fever (inc. Paratyphoid)	6	..	3	..	3
Total	1,653	2,183	1,052	996	790

Health Education

The Health Education Council is composed of representatives of the Division of Public Health, the Education Department, the Mental Health Services Commission, the Adult Education Board and several other interested persons. The Council's aim is public education by distribution of information on health matters.

National Fitness Section

This is concerned with putting into effect the Tasmanian National Fitness Council's policy, which is the promotion of community health and personal fitness; this involves the promotion and extension of physical recreation and amateur sport, fitness and training programmes, co-ordination of youth work, and assistance to existing youth and recreation groups. The main cost is met by the State Government (\$58,124 in 1968-69) and a small grant is made by the Commonwealth Government. Close contact is maintained with local government authorities and community organisations interested in the various aspects of community fitness and recreation. Assistance is given in the development of indoor recreation centres, camping facilities and programmes, amateur sports, outdoor activities such as canoeing, mountain and bush expeditions and adventure activities generally. Executive services are provided for the Duke of Edinburgh Award Scheme and for the Youth Council of Tasmania.

Mental Health Services Commission

Introduction

Significant advances have been made in the field of clinical psychiatry and in the treatment of mental illness during the past three decades. The development of psychotropic drugs, new therapeutic techniques and improved methods of clinical practice has revolutionised the mental hospital from an institution for the incarceration of lunatics to a modern hospital geared to the care and rehabilitation of the unfortunate sufferers of psychiatric disorders.

Mental Health Services Commission

The Mental Health Services Commission was established under the *Mental Health Services Act* 1967, following an interdepartmental investigation into psychiatric services in Tasmania. The Commission comprises three members: a Medical Commissioner (who also holds the post of Director of Psychiatric Services), a Clinical Commissioner (being Professor of Psychiatry at the University of Tasmania) and an Administrative Commissioner. Since 1 July 1968, the Commission has operated as a statutory authority, completely seaparate from the Department of Health Services.

The Commission has continued to concentrate on taking adult and child psychiatry into the community in an attempt to treat the large majority of sufferers of mental illness as close as possible to their own domestic environment: to this end, its consultative facilities are spread on a regional basis and acute psychiatric units have been established at Launceston, Wynyard and Devonport. Each unit is equipped with a full psychiatric team, consisting of a consultant psychiatrist, psychologist and either one or two social workers. These regional units are closely linked to the public hospital complexes and provide a consulting service for other medical disciplines.

The ultimate aim of the Mental Health Services Commission is to provide adequate psychiatric services for all age groups in the community, the principal objective being the reduction of time spent in hospital and the development of community services.

Important links have been established with the Tasmania University Department of Psychiatry and a significant new development in 1970 was the opening of the Professional Psychiatric Clinic at the Royal Hobart Hospital. Occupying two floors, the unit provides both in-patient and out-patient facilities. It is intended that the unit will ultimately become a centre for post-graduate training and research.

A further significant step in the field of preventive psychiatry has been the appointment by the Commission of a Co-ordinator in Community Health Services to co-ordinate the various governmental, professional, voluntary and educational organisations involved in health and social matters in the community.

Royal Derwent Hospital

The following table shows the number of patients who were admitted, discharged or died:

Royal Derwent Hospital (a)
Number of Patients Admitted and Discharged, and Deaths, 1968-69

Particulars	Males	Females	Total
Patients at Beginning of Year	429	465	894
Patients Admitted—			
Admitted, First Time	207	211	418
Re-admitted	227	226	453
Returned from Leave	145	125	270
Total	579	562	1,141
Patients—			
Discharged from Hospital	310	346	656
Proceeded on Leave	200	186	386
Died	31	32	63
Total	541	564	1,105
Patients at End of Year	467	463	930

(a) Incorporates Millbrook Rise Hospital from 1 July 1968.

Other Institutions

Hobart: Clare House Day Hospital was established in 1964 for the assessment and treatment of alcoholics. Its role has since been broadened to encompass a wide range of psychiatric disorders. Attendance rates have increased yearly: in 1968-69, 404 new patients sought treatment, while 3,270 out-patient and 2,356 day patient visits were made.

The Combined Children's Centre was opened in February 1968 for the treatment of psychiatrically disturbed children referred to the Centre by private medical practitioners, the Royal Hobart Hospital, Social Welfare Department, School Medical Service and the Guidance Branch of the Education Department. At 30 June 1969, there were 250 children under treatment.

The Day Minding Centre was opened in September 1968 to care for severely mentally retarded children, many of whom are also physically retarded. At 30 June 1969, thirty-two children were enrolled at the Centre.

The following table shows the diagnosis of mental illness of patients in the Royal Derwent Hospital:

Royal Derwent Hospital (a)
Diagnosis of Mental Disorder of Patients, 1968-69

Mental Disorder	Patients Admitted (b) 1968-69			Patients at 30 June 1969		
	Males	Females	Total	Males	Females	Total
Senile and Pre-Senile Dementia ..	23	36	59	15	72	87
Alcoholic Psychosis	10	5	15	9	3	12
Psychosis with Intracranial Infection .. ..	..	..	..	2	3	5
Psychosis with other Cerebral Condition	13	7	20	14	14	28
Psychosis with other Physical Condition	2	1	3	1	..	1
Schizophrenia	65	87	152	145	93	238
Affective Psychoses	23	34	57	19	18	37
Paranoid States	8	4	12	14	10	24
Other Psychoses	2	1	3	1	..	1
Unspecified Psychoses .. ..	..	..	..	1	..	1
Neuroses	49	110	159	6	19	25
Personality Disorders	40	32	72	21	8	29
Sexual Deviation	8	..	8	3	2	5
Alcoholism	110	31	141	14	4	18
Drug Dependence	5	32	37	..	8	8
Specific Learning Disturbance ..	..	1	1	..	..	..
Transient Situational Disturbances	2	2	4	..	..	..
Behaviour Disorders of Childhood	4	4	8	5	2	7
Mental Disorder not Specified as Psychotic Associated with Physical Conditions	12	8	20	9	8	17
Mental Retardation—Borderline ..	8	3	11	8	9	17
Mild	15	8	23	21	21	42
Moderate	17	11	28	63	54	117
Severe	5	14	19	50	79	129
Profound	3	6	9	31	30	61
Unspecified	10	..	10	15	6	21
Total	434	437	871	467	463	930

(a) Includes Millbrook Rise Hospital.

(b) Excludes those returned from leave.

Launceston: The Lindsay Miller Clinic at the Launceston General Hospital reported the following attendance figures during 1968-69: out-patient visits, 7,081; day patient visits, 550; in-patients, 674. During 1970, a Mental Health Workshop was set up to help handle juvenile delinquency problems.

North-West: In-patient facilities are available at the Mersey General Hospital and the Wynyard Division of the North-Western General Hospital. The following table shows the number of out-patients treated at the various psychiatric clinics on the North-West coast:

Outpatient Clinics
Number of Persons Treated, 1968-69

Clinic	New Patients	Old Patients	Total
Burnie	104	849	953
Devonport	159	1,148	1,307
Ulverstone	85	392	477
Wynyard	98	379	477
Smithton	2	36	38
Total	448	2,804	3,252

Division of Tuberculosis

The Division is concerned with diagnosis, treatment and after-care. Under an arrangement with the Commonwealth, the Tasmanian Government conducts a campaign against T.B. The State is reimbursed by the Commonwealth Government for approved capital and maintenance expenditure, in carrying out the physical work of the campaign.

An allowance is paid by the Commonwealth Department of Social Services to T.B. sufferers to encourage them to give up work, to minimise the spread of the disease, and to promote better treatment. The allowance is subject to a means test on income (but not on property) and provides \$15 a week for a single person in hospital and \$18.25 weekly whilst at home; married sufferers at home or in hospital are paid \$29.75 per week plus \$2.50 for the first dependent child and \$3.50 for each subsequent child.

Tubercular patients are treated at the Tasmanian Chest Hospital (New Town). The X-ray campaign has led to a reduction in demand for in-patient treatment and to generally shorter periods in hospital.

The following table shows the confirmed diagnosis of tuberculosis cases notified in Tasmania over a five-year period.

**New Cases Notified to Tuberculosis Division
Classification by Diagnosis and by Sex**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Pulmonary Males	48	34	36	31	37
Females	18	23	13	12	12
Tuberculosis Pleural Effusion .. Males	1	..	..	1	..
Females	2	1	..	..	..
Primary Tuberculosis Males	1	..	1	..	..
Females	..	..	1	..	..
Non-Pulmonary Cases Males	5	1	3	2	5
Females	6	7	4	2	3
<hr/>					
All New Cases .. Males	55	35	40	34	42
Females	26	31	18	14	15
<hr/>					
Persons	81	66	58	48	57

State Controlled Hospitals

General

In Tasmania, there are private hospitals and also hospitals for which the State Government accepts the major financial responsibility; in the case of the latter group, control is either direct or exercised through hospital boards.

Institutions controlled by the State (either directly or through boards) include four general hospitals, 15 district hospitals, 13 district nursing hospitals with bed accommodation, one mental hospital, two maternity hospitals, one chest hospital and three hospitals for the aged. (The Department of Health Services directly administers the chest hospital and one hospital for the aged.) These institutions could all legitimately be described as 'public'. However, in the tables in this section, the term 'public' is applied only to the general and district hospitals, the other types of institution being specified separately.

General Hospitals (Public)

Hospitals providing all facilities and specialised treatment are the Royal Hobart, Launceston General, Mersey General (at Latrobe) and North Western General (with divisions at Burnie and Wynyard). The Queen Alexandra (Hobart) and the Queen Victoria (Launceston) are maternity hospitals.



Studio teachers on the set for 'Fossils' in the 'Science at Work' series

(Brian Curtis)

A.B.C. production team and fisherman filming a programme in the 'This Island' series

(Dept of Film Production)





Actors recording a 'Once Upon a Time' programme in the Hobart studios of the A.B.C.

(Brian Curtis)

Student at the Rosetta High School watching a 'Schools' television programme

(Teaching Aids Centre)



Specialist treatment is available at general hospitals in obstetrics, gynaecology, orthopaedics, urogenital surgery, plastic and reconstructive surgery, neuro-surgery and neurology, radiology, pathology, radiotherapy, psychiatry and ophthalmology; skin diseases and venereal diseases are also treated and clinics operate in thoracic medicine and surgery. An emergency obstetrical service, with specialists based in Hobart and Launceston, provides a free service to the smaller public hospitals, district nursing hospitals and district medical officers outside the two cities.

The Lady Clark Hospital, an annexe of the Royal Hobart Hospital, is a rehabilitation and physiotherapy centre with both in-patient and out-patient facilities.

The Peacock Convalescent Hospital in Hobart is run by a committee of management, most of its patients being referred from the Royal Hobart Hospital.

All district nursing hospitals, formerly administered by the Health Department, have been administered as annexes by various general or district hospitals since 1 July 1968, the parent hospital in each case being selected on a geographical basis.

Fees

The daily general ward fees charged in the State-controlled hospitals are not much lower than those charged in multiple bed wards in private hospitals. However, the former fees are all-inclusive (i.e. covering medical attendance, surgery, although additional charges may be made for radiology, pathology and electroencephalography) while the latter cover only accommodation and general nursing. Under the 'personal patient' scheme, a patient in the Hobart and Launceston general hospitals may have his own doctor, if he is an honorary doctor at the hospital, for the payment of an additional fee. Voluntary insurance with hospital fund organisations and Commonwealth hospital benefits enable most patients to meet the fees charged.

Hospitals for the Aged and Invalids

The State Government administers three hospitals caring for the aged and for invalids. In the table that follows, the average daily number of inmates is dissected between 'general' and 'hospital'; 'general' refers to inmates who are not receiving treatment in the hospital sections of the hospitals.

Government Hospitals for the Aged, 1968-69

Institution	Average Daily Number of Inmates			Beds Available		
	For General Care	For Hospital Treatment	Total	For General Care	For Hospital Treatment	Total
Cosgrove Park (a)	103	134	237	140	134	274
St John's Park ..	151	301	452	236	313	549
Spencer (b) ..	7	23	30	10	25	35
Total ..	261	458	719	386	472	858

(a) Cosgrove Park is administered as part of the Launceston General Hospital.

(b) This is a geriatric wing of the Wynyard Division of the North-Western General Hospital (previously the Spencer Hospital).

It is planned to develop St John's Park (the southern State geriatric hospital) into a comprehensive complex of services, including in-patient services, in addition to geriatric patients, for children and adults requiring hospitalisation because of all forms of disablement e.g. spastic diseases, mental retardation, crippled children and other handicapped persons and disabled persons generally. Domiciliary and day hospital therapeutic and home help facilities will be based on this general 'rehabilitation' complex.

The co-ordination of services will be compatible with the most economic and effective use of skilled, especially qualified paramedical staff.

District Hospitals (Public)

These do not provide the full range of services available in the general hospitals, and do not have resident medical officers. They are located at Beaconsfield, Campbell Town, Currie, Franklin, Longford, New Norfolk, Ouse, Queenstown, Rosebery, Scottsdale, Smithton, St Marys, Ulverstone, and Whitemark. The Zeehan District Hospital ceased operation in November 1970.

Finances of State Controlled Hospitals

The following table gives a financial summary of the operation of State controlled hospitals and hospitals for the aged ('public' hospitals in the table include general and district hospitals):

State Controlled Hospitals and Hospitals for the Aged
Receipts and Payments (a) 1968-69
(\$'000)

Particulars	Hospitals (excluding Mental)				Mental Hospital	Hospitals for the Aged
	Public (b)	Chest	Maternity (c)	Total		
Receipts—						
Government Aid—						
State	7,248	..	452	7,700	2,171	1,139
Commonwealth..	858	210	6	1,074	60	408
In-Patient Fees ..	2,830	..	449	3,279	73	235
Out-Patient Fees..	297	..	..	297	..	..
Other	24	..	1	25	44	11
Total ..	11,257	210	907	12,374	2,349	1,793
Payments—						
Salaries and Wages	7,925	167	621	8,713	1,649	1,333
Provisions ..	653	(d)	76	(d)	218	171
Domestic Supplies ..	832	(d)	115	(d)	(d)	173
Dispensary, etc. ..	1,194	(d)	30	(d)	40	37
Other	856	43	64	3,862	442	78
Total ..	11,459	210	906	12,575	2,349	1,793

(a) Excludes expenditure from State Loan Fund.

(b) Includes maternity wards in public hospitals.

(c) Excludes maternity wards in public hospitals.

(d) Not available on a comparable basis; included in 'Other'.

Staff and Patients in State Controlled Hospitals

The following table gives a summary of the main statistics relating to staff and patients in State controlled hospitals and hospitals for the aged.

**State Controlled Hospitals and Hospitals for the Aged
Staff, Accommodation and In-Patients**

Particulars	Hospitals (excluding Mental)		Mental Hospital		Hospitals for the Aged	
	1967-68	1968-69	1967-68	1968-69	1967-68	1968-69
Hospitals and Homes .. no.	22	22	1	1	3	3
Nursing Staff—						
Males	38	45	164	157	116	109
Females	1,592	1,893	167	164	152	160
Beds Available (Patients) .. no.	2,085	2,215	1,030	1,030	858	858
In-Patients—						
Total Number Treated						
Males	18,164	18,510	1,097	1,008	618	586
Females	24,972	27,693	1,030	1,027	483	473
Daily Average Number of						
Patients During Year						
Males	565	573	455	448	380	371
Females	716	809	463	462	343	348
Persons	1,281	1,382	918	910	723	719
In-Patient Costs—						
Total \$'000	9,636	11,067	2,167	2,300	1,681	1,793
Daily Average Per Patient .. \$	20.61	21.94	6.46	6.92	6.37	6.83

Private Hospitals

These are operated by church and other private organisations. They are licensed to receive surgical, medical, maternity or psychiatric cases. Of the seven medical-surgical private hospitals, Calvary and St John's (Hobart) and St Luke's and St Vincent's (Launceston) are the largest.

Nursing homes, operated by private bodies, are institutions which do not conform to private hospital specifications with regard to equipment, construction and staffing, as laid down under the *Hospitals Act*. They are licensed to treat general cases within limits as specified in the licence. Rest homes are licensed usually to admit old people who require minimal medical care. At 30 June 1969, there were 40 private institutions concerned with aged people who were ambulant, convalescent, or suffering from geriatric illnesses. Nazareth House (St Leonards), St Ann's Rest Home (Hobart), Meercroft Home (Devonport) and Freemason's Homes of Southern Tasmania (Lindisfarne) are the biggest of these, 19 of which have accommodation for 20 or more patients. Two other private hospitals cater for incurable or chronic illnesses, two for general convalescence and two for retarded children.

State Health Laboratory

The State Health Laboratory is under the control of the Director of Pathology. Apart from providing certain pathological services to the Royal Hobart Hospital, other hospitals and to doctors, the laboratory provides special bacteriological and cytological services.

The Laboratory is located at the Royal Hobart Hospital; prior to 1965 special tests had to be done in Melbourne, but equipment installed in that year now enables all work to be done in Tasmania. Magnifications of 100,000 diameters can be gained with the electron microscope and this is particularly useful in medical teaching and in diagnosis. Specimens from suspected T.B. sufferers, discovered in the compulsory chest X-ray programme, are examined and uterine and other cancers can be discovered by the Papanicolaou smear test. Tasmania was the first Australian State to introduce this test on a large scale; early diagnosis by this simple and effective method, particularly in

women who show no symptoms, usually makes possible the cure of this type of cancer. Mass screening of new-born babies is done to correct errors of inborn metabolism, especially phenylketonuria. Other work includes analysis of food, water and milk samples.

Government Analyst and Chemist Laboratory

This laboratory analyses a wide variety of foods, drugs and other substances and undertakes work for government departments and the public. Its work includes food and agricultural chemistry, forensic chemistry and toxicology, analyses for industrial hygiene purposes, water and corrosion problems, and other matters.

Other Health Matters

Child Health Institutions

These are medical institutions run by the State or subsidised by public funds. They provide treatment and supervision along with general education. The Sight Saving School, School for the Deaf, School for the Blind, Talire (for retarded children) and Wingfield (for orthopaedic patients) are government institutions for children with particular defects.

Ambulance Services

The Ambulance Commission of Tasmania co-ordinates services throughout the State and is responsible to the Minister for seeing they operate effectively. Ambulance Boards, centred on Hobart, Launceston, Devonport and Burnie, control services in the adjacent municipalities. A few municipalities, however, operate services outside the *Ambulance Act*. The total Government grant to ambulance services, both under Board and independent control, was \$116,000 in 1969-70.

Ambulance services under control of the four Boards provide free transport for ratepayers, occupiers and pensioners. In addition to receiving Government subsidies, their income is derived from fees (payable by visitors) and municipal grants (in 1969-70, from a rate of 0.2083 cents in the \$).

The Ambulance Commission has adopted the training standards of the Victorian Ambulance Officer's Training School.

Royal Flying Doctor Service

This was established in Tasmania in 1960 and has as its purpose the provision of medical and dental services to persons in isolated areas. If the illness or injury is serious, a doctor flies to the patient and if necessary brings him back to a hospital. The ambulance services receive the calls, make arrangements to charter aircraft and supply medical equipment. The Commonwealth and State Governments make an annual grant towards operational expenses.

Blood Transfusion Service

Prior to 1954, the Australian Red Cross Society, which operates the Service, was assisted only by the State Government; since then, a grant equal to 30 per cent of operating expenses has been made by the Commonwealth Government and 60 per cent by the State. The combined grant in 1969-70 was \$66,492.

Municipal Health Functions

Municipal councils and city corporations possess wide powers and responsibilities in public health. They organise triple antigen immunisation campaigns against diphtheria, whooping cough and tetanus, and vaccinations

against poliomyelitis and smallpox. (These are available without charge to children under 17 years.) They control the condemnation of sub-standard dwellings, the effective disposal of sewerage and drainage, the provision of garbage and night soil services, the construction of reservoirs and the reticulation of water. A Medical Officer of Health, often appointed by two councils, is responsible, among other things, for enquiring into the causes, origins and distribution of diseases; for investigating influences affecting the public health of the district; for directing and supervising the municipal health inspectors in the execution of the *Public Health Act* for inspection of local certificates of notification of infectious disease and direction of control of such disease; for reporting the existence of any nuisance and inspection of any animal, carcass, provisions of food for sale for human consumption; and for inspecting any premises where milk or milk products are produced or stored and for reporting on health of inmates or animals on the premises.

Commonwealth Department of Health

General

The Department is concerned in Tasmania with the maintenance of a quarantine service involving supervision of persons, animals, plants and goods from overseas; the provision of hospital nursing home, handicapped children's medical and pharmaceutical benefits; the payment of grants for free milk to school children; the pensioner medical service; tuberculosis allowances; home nursing, mental institution and other subsidies; the control and maintenance of health laboratories at Hobart and Launceston; the Acoustic Laboratories in Hobart and Launceston; co-operation with the State Department of Health Services, in planning and taking measures to improve public health, including the anti-tuberculosis and anti-poliomyelitis campaigns, and National Fitness; the conduct of certain medical examinations; and the supervision of the medical aspects of radio and television advertising and talks on medical matters.

Commonwealth National Health Payments

The following table shows the total Commonwealth payments for health benefits and services in Tasmania:

Commonwealth National Health Payments (a)
(\$'000)

Benefit or Service	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Hospital Benefits	1,092	1,147	1,235	1,289	1,518	1,590
Nursing Home Benefits	611	664	756	761	800	1,010
Medical Benefits—						
General	686	1,000	1,140	1,195	1,443	1,609
For Pensioners	253	256	386	406	460	491
Pharmaceutical Benefits—						
General	r 1,156	r 1,287	r 1,379	r 1,526	r 1,438	1,722
For Pensioners	527	578	637	802	850	1,030
Payments to Hospitals	75	414	713	538	602	706
Handicapped Children's Benefit (b) .. ..	..	..	..	..	..	5
Tuberculosis Campaign (c)	442	437	422	404	401	428
Free Milk Scheme	391	380	398	442	503	421
Miscellaneous	65	66	82	104	101	112
Total	r 5,298	r 6,229	r 7,148	r 7,467	r 8,116	9,124

(a) Payments from National Welfare Fund and minor items of expenditure from Consolidated Revenue Fund.

(b) Introduced from 1 January 1969.

(c) Includes allowances to persons and reimbursements to State Government for approved expenditure.

Pensioner Medical Service

Free general practitioner medical treatment is available for most age, invalid, widow and service pensioners and their dependants (the exclusion relates to those admitted to pension by liberalisation of the means test in April 1967 and October 1969). Entitlement cards for these benefits are issued by the Social Services Department (or by the Repatriation Department in respect of service pensioners).

Commonwealth Acoustic Laboratory

The main function of the Laboratory is the provision and maintenance of hearing aids, without charge, to deaf school and pre-school children, and to those whose hearing loss was discovered after leaving school, but who are still under 21 years of age. It also provides and maintains hearing aids on behalf of the Repatriation and other Commonwealth departments and assists the Education Department in measuring deafness by providing and maintaining portable audiometers. A 1967 amendment to the *Federal National Health Act* provided that the laboratory should supply eligible pensioners with hearing aids on hire (for a single payment of \$10) and give the necessary technical services for fitting, re-adjusting, maintaining, etc.

Quarantine

Quarantine, is administered by the Commonwealth, guards against the importation from overseas of human, animal and plant infection. The administration of safeguards against infection from *interstate travel and trade* is left to the States unless Commonwealth action is necessary for the protection of a State.

National Health Benefits

General: A basic principle in the provision of medical and hospital benefits is Commonwealth support for voluntary insurance against the costs involved. Registered health insurance organisations collect contributions from members and refund a proportion of hospital or doctors' charges. They also act as paying agents for Commonwealth medical and hospital benefits: non-contributors to organisations receive from the Commonwealth a reduced rate of hospital benefit and no medical benefit. Membership may be had in, and hospital benefits received from, more than one organisation; membership may be had in only one organisation for medical benefit; and Commonwealth benefit is paid only once in respect of each claim.

A Special Account system provides an assured rate of benefit to contributors who would otherwise have been excluded because of organisations' rules relating to pre-existing ailments, chronic illnesses and maximum organisation benefits; payments made by organisations under this provision are reimbursed by the Commonwealth.

Medical Benefits: In 1970, important amendments to the *National Health Act 1953-69* introduced a new national medical benefits scheme based on the principle of a 'most common fee'. A list of fees representing those most commonly charged by doctors in each state was compiled, following a survey undertaken before finalising the new medical benefits scheme. From 1 July 1970, contributors to a registered medical benefits fund, whose doctor charges the 'most common fee', pay no more than \$5 for any medical service, ranging from 80c for a surgery visit to \$5 for a complicated surgical operation. The balance of the cost is then shared between the health fund and the Commonwealth Government. The old multi-table scheme has been replaced by a single table with contribution rates varying from state to state; in Tasmania most organisations have a weekly family rate of 55c and a single rate of 28c.

Hospital Benefits: These benefits are paid for all patients by the Commonwealth at a minimum rate of \$0.80 a day, but if a person contributes to an organisation, the Commonwealth benefit increases to \$2. The highest combined organisation and Commonwealth benefit in Tasmania is \$15.50 a day (organisation benefits are not uniform) and the maximum rate of family contribution is \$1.15 a week.

Nursing Home Benefits: The Commonwealth pays a benefit of \$2 per day direct to the homes for each patient and a further \$3 a day for patients classified as requiring intensive care. The institutions need to be approved as nursing homes under the *National Health Act*. Patients do not have to be insured with a hospital benefits organisation and there is no time limit on the payment of benefits.

Handicapped Children's Benefit: A benefit of \$1.50 per day is paid for each handicapped child (to 16 years) in approved institutions.

Hospital and Medical Benefit Payments: Commonwealth hospital benefit payments are made on a hospital-bed-day basis as follows: insured patients, \$2; uninsured, 80c; pensioner patients, \$5; and nursing home patients, \$2. The following tables show payments by the Commonwealth, and also by the health insurance organisations (referred to as 'fund benefits') in Tasmania, together with details of the number of such organisations and their membership.

Hospital Insurance: Members and Benefits

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Registered Organisations (a) no.	10	10	9	9	9
Members (a) .. '000	114	120	114	118	115
Hospital Benefits Paid—					
Commonwealth Benefits—	\$'000	\$'000	\$'000	\$'000	\$'000
Insured Patients (b) ..	677	670	670	688	709
Uninsured Patients (c) ..	50	50	46	47	45
Pensioner Patients (c) ..	420	515	572	783	836
Nursing Home Patients (c) ..	664	756	761	800	1,010
Total	1,811	1,991	2,050	2,318	2,600
Fund Benefits (d)	1,854	2,087	2,290	2,925	3,228

(a) At end of year.

(b) Includes Special Account deficits.

(c) Paid direct to hospitals by Commonwealth.

(d) Includes Ancillary Benefits: certain supplementary services for which a Fund Benefit payment, but no Commonwealth payment, is made e.g. home nursing, physiotherapy, provision of spectacles, orthoptics, chiropractics, theatre fees.

Medical Insurance: Members and Benefits

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Registered Organisations (a) no.	10	10	9	9	9
Members (a) '000	108	114	110	115	113
Medical Services During Year .. '000	771	802	818	962	982
Medical Benefits Paid—					
Commonwealth Benefits \$'000	1,000	1,140	1,195	1,446	1,609
Fund Benefits (b) .. \$'000	1,150	1,256	1,336	1,436	1,704

(a) At end of year.

(b) Includes Ancillary Benefits—see note (d) in preceding table.

Pharmaceutical Benefits: Under this scheme, drugs and medicines for patients, who are required to pay a flat charge of 50 cents, can be prescribed by a medical practitioner or by a hospital. Not all drugs and medicines can be supplied under this scheme, but the Health Department's list of approved pharmaceutical preparations is extensive and, in practice, over 70 per cent of all doctors' prescriptions are available as pharmaceutical benefits. Under this scheme basic rate pensioners receive their pharmaceutical requirements free of charge.

Subsidised Medical Services: The Commonwealth also provides special financial assistance in the following cases:

- (a) Low income benefit: (i) a family with an income of \$42.50 (gross) or less: free medical benefits and public ward hospital cover; (ii) gross family income above \$42.50, but not exceeding \$45.50: medical benefits and public ward hospital cover for one-third of the normal health insurance contribution; (iii) gross family income above \$45.50, but not exceeding \$48.50: benefits as above, but for two-thirds of the normal health insurance contribution.
- (b) Persons receiving unemployment, sickness or special benefits under the *Social Services Act*: full medical benefits and public ward hospital cover.
- (c) Migrants, full medical benefits and public ward hospital cover during the first two months in Australia, providing the migrant has joined a medical benefits fund.

Commonwealth-Assisted Health Organisations

National Heart Foundation of Australia

This was established to promote research in cardio-vascular disease, to rehabilitate heart sufferers and to foster the dissemination of information about heart diseases. The State Division deals especially with rehabilitation and education. The State Government recognised the importance of this work by creating a Cardio-vascular Services section within its own Department of Health Services in 1967.

Other Organisations

Other organisations associated with public health and receiving Commonwealth grants and the Red Cross Blood Transfusion Service, the Royal Flying Doctor Service and the Tasmanian National Fitness Council; these have been dealt with in an earlier section.

LAW, ORDER AND PUBLIC SAFETY

Law in Tasmania

History

The origin and evolution of Tasmanian law, and the origin of the various courts, are described in the 1967 *Year Book*.

Juries

Tasmanian legislation regulating juries seems to have been first passed in 1830 although, for many years before that date, the introduction of the British system of trial by jury in civil and criminal cases had been persistently urged in the colony. The *Hobart Town Gazette* shows that juries had been employed in the colony for the trial of criminal cases from the establishment of the Supreme

Court in 1824. Juries remain as the tribunal for trying indictable criminal cases and there is a limited right to a jury in civil cases, although in 1935 they were abolished for the purpose of trying motor-accident cases.

Although the Tasmanian jury system was based on the English system it has, since 1934, embodied the principle of allowing *majority* decisions in certain circumstances instead of requiring the *unanimous* decisions once characteristic of jury usage in England and most other countries.

Civil cases have a seven-member jury and, if after three hours' deliberation a 7-0 decision cannot be reached, a 5-2 decision is accepted. If the minimum 5-2 decision cannot be reached after four hours, the jury may be discharged.

In criminal cases, similar principles apply except that a 10-2 decision is accepted in lieu of 12-0 after stipulated periods of deliberation. In the case of crimes punishable with death, 12-0 is necessary to convict, but 10-2 can bring in a verdict of not guilty, or not guilty of the capital crime, but guilty of a lesser crime. (*Capital punishment was abolished in 1968.*)

Description of Courts Having Jurisdiction in Tasmania

Courts of Petty Sessions

For particular municipalities in the State, there is a Court of Petty Sessions. The Court is constituted by a legally qualified stipendiary magistrate or by two or more lay justices sitting in Petty Session. In major centres of population, a Court sits regularly and, in smaller centres, a Court sits less frequently or is convened as occasion requires. A stipendiary magistrate has power to do alone whatever may be done by a Court of Petty Sessions and any other act which may be done by two or more justices in Petty Session.

A Court of Petty Sessions has jurisdiction over all summary offences and also over certain indictable offences at the option of the defendant. Under the *Justices Act 1959*, a defendant may choose summary trial in the Court of Petty Sessions when charged with the following crimes: (i) Escape or rescue; facilitating escape of a prisoner or harbouring an offender; assisting escape of a criminal lunatic; rescuing goods legally seized; making a false declaration (or statement). (ii) Stealing; killing an animal with intent to steal; unlawfully branding an animal; obtaining goods by a false pretence; cheating; fraud in respect of payment for work; receiving stolen property. (In all these cases the value of the property concerned must exceed \$20 but not \$400. If the value does not exceed \$20 the defendant will be tried summarily. If it exceeds \$400 he will be committed for trial in the Supreme Court.) (iii) Breaking a building other than a dwelling-house. (It is necessary for the defendant to be committed to the Supreme Court for trial where it is alleged that in the commission of the offence; property to the value of more than \$400 has been stolen; violence has been used or offered to any person in or about the building; the person had in his possession a gun, pistol, dagger, cosh, or other offensive weapon; explosives were used; or the defendant intended to commit a crime other than stealing.) (iv) Forgery; uttering. (The complaint must be for an offence in respect of a cheque for not more than \$400.)

The following table shows the number of cases tried in the lower courts over a five-year period. (Minor traffic offences settled without court appearance are excluded.)

Cases Tried in Lower Courts

Offence		1965	1966	1967	1968	1969
Offences Against the Person	.. Males	754	640	779	786	891
	Females	13	20	25	14	32
Offences Against Property	.. Males	3,588	3,558	3,604	3,937	3,987
	Females	294	352	342	441	335
Offences Against the Currency	.. Males	361	171	116	151	179
	Females	9	100	73	72	21
Offences Against Good Order	.. Males	1,985	1,957	1,804	1,819	2,082
	Females	46	106	76	100	107
Offences Against Traffic Regs.	.. Males	24,135	23,626	23,067	20,450	18,717
	Females	1,188	1,479	1,391	1,264	1,130
All Other Offences (a)	.. ..	7,082	9,197	10,098	8,906	8,551
	Females	489	764	481	734	411
Total Offences	.. .. Males	37,905	39,149	39,468	36,049	34,407
	Females	2,039	2,821	2,388	2,625	2,036

(a) Includes offences mainly against liquor, education, neglected children, revenue, and gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

The following table shows cases tried and their results (minor traffic offences settled without court appearance are excluded).

Lower Courts, 1969

Offence	Cases Tried	Results of Trials				
		Convictions	Committed to Higher Courts	Ad-journed Sine Die	Dismissed or With-drawn(a)	Re-manded
MALES						
Offences Against the Person ..	891	569	126	65	118	13
Offences Against Property ..	3,987	2,693	516	500	228	50
Offences Against the Currency ..	179	81	46	3	3	46
Offences Against Good Order ..	2,082	1,582	13	255	206	26
Offences Against Traffic Reg- ulations	18,717	13,646	5	1,664	3,368	34
All Other Offences (b)	8,551	6,555	8	975	1,004	9
Total	34,407	25,126	714	3,462	4,927	178
FEMALES						
Offences Against the Person ..	32	11	11	10	..	..
Offences Against Property ..	335	228	16	51	39	1
Offences Against the Currency ..	21	15	4	..	2	..
Offences Against Good Order ..	107	71	..	22	13	1
Offences Against Traffic Reg- ulations	1,130	732	..	102	296	..
All Other Offences (b)	411	332	2	29	48	..
Total	2,036	1,389	33	214	398	2
PERSONS						
Total	36,443	26,515	747	3,676	5,325	180

(a) 'Dismissed' is equivalent to 'not guilty' in higher courts.

(b) Includes offences mainly against liquor, education, neglected children, revenue, and gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

Courts of Request

These are constituted as courts with civil jurisdiction for particular municipalities in accordance with the authority given by the *Local Courts Act* 1896. Courts are held before a commissioner, who is a legally qualified practitioner of the Supreme Court and usually a stipendiary magistrate. The Attorney-General fixes the dates on which these courts sit.

Every Court has jurisdiction throughout the State but a plaintiff may lose costs if he brings his action in a Court other than the Court nearest to which the cause of action arose.

The jurisdiction of a Court of Requests, which is a court of record, covers all personal actions where the debt or damage claimed does not exceed the maximum amount fixed under the Act. Since 1 November 1966, the sum of \$1,500 has been fixed as the maximum jurisdiction for a Court of Requests in respect of a debt or liquidated sum, and \$1,000 in any other case.

The commissioner alone determines all questions of fact as well as of law and his decision is the judgment of the Court, unless a jury is required. In any action either party may require a jury as of right and there is power for the commissioner to order that an action be tried by a jury, even though neither party has required it.

Law and equity are administered concurrently in the Court and the general principles of practice in the Supreme Court are adopted and applied in cases not expressly provided for in the Act or Rules.

Courts of General Sessions

A Court of General Sessions with civil jurisdiction is constituted under the *Local Courts Act* 1896 for particular municipalities of the State. The cities are excluded, civil actions there being dealt with by Courts of Requests. A Court of General Sessions is constituted by a chairman (elected by the justices for the municipality) and at least one other justice. All questions are decided by a majority of the justices present and, if they are equally divided in opinion, the chairman has both a deliberative and a casting vote. If there is business requiring its attention, the Court sits at times fixed by the Attorney-General.

A Court of General Sessions has jurisdiction to deal with civil proceedings of a minor nature and the limit of the Court's jurisdiction has been fixed at the sum of \$100.

Litigation in Civil Courts

The following table shows the number of complaints entered and writs issued in the lower and higher Tasmanian courts over a three-year period:

Litigation in Civil Courts

Particulars	1967		1968		1969	
	Number	Amount	Number	Amount	Number	Amount
		\$'000		\$'000		\$'000
Lower Courts— Complaints Entered	38,276	2,991	40,919	3,492	42,250	3,598
Verdicts for Plaintiff	17,165	1,314	18,037	1,528	20,592	1,449
Higher Courts— Writs Issued	1 985	n.a.	1,135	n.a.	1,326	n.a.

The Supreme Court of Tasmania

The Supreme Court of Tasmania is constituted by the Chief Justice and four Puisne Judges. Regular sittings of the Court are held at Hobart, Launceston and Burnie, although the Court is empowered to sit and act at any time and at any place for the exercise of any part of the jurisdiction and business of the Court.

The Court has jurisdiction over all causes, both civil and criminal, except those reserved to the High Court of Australia under the Commonwealth Constitution. It also exercises federal jurisdiction in matters such as matrimonial causes, bankruptcy, etc. Its civil jurisdiction extends to all causes of action, whatever the amount involved may be, and its criminal jurisdiction includes the trial of all indictable offences. In civil cases, the Court has power to call in the aid of one or more assessors specially qualified to assist in the trial of the actions, but is not bound by the opinion or advice of any such assessor.

There is an appeal to the Supreme Court of Tasmania from all inferior courts, and from many statutory tribunals.

Law and equity are administered concurrently in the Court which is enjoined to grant, either absolutely or on such terms and conditions as seem just, all such remedies to which any of the parties may be entitled so that, as far as possible, all matters in controversy between the parties may be completely and finally determined, and a multiplicity of legal proceedings avoided. The Judges, on the recommendation of the Rules Committee, are empowered to make rules regulating the practice and procedure of all proceedings in the Court.

The jurisdiction of the Court is usually exercised by a Judge of the Court and from his decision there is an appeal to the Full Court of the Supreme Court of Tasmania. A Full Court consists of two or more Judges of the Court. The Full Court is also a Court of Criminal Appeal under the Criminal Code. The latter is a Court to which appeals may be brought by the Crown or by an accused person where an indictable offence is involved. In some cases, there is an appeal as of right but, in other cases, special leave is required.

The following table shows the number of cases tried in the higher courts, and the number of convictions:

Supreme Court Actions, 1969

Offence	Cases Tried		Convictions	
	Males	Females	Males	Females
Offences Against the Person—				
Murder	6	..	4	..
Manslaughter—Other than While Driving ..	2	..	2	..
While Driving	3	..	3	..
Culpable Driving, inc. Causing Death by Dangerous Driving (other than Manslaughter)	3	..	3	..
Rape	4	..	4	..
Other Unlawful Carnal Knowledge (excl. Buggery or Bestiality)	24	..	24	..
Other Offences against Females	9	..	9	..
Buggery or Bestiality	1	..	1	..
Other Unnatural Offences	7	..	7	..
Robbery, excl. Stealing from the Person ..	15	..	15	..
Malicious Wounding	5	..	2	..
Aggravated Assault	5	..	3	..
Common Assault	10	..	10	..
Other Offences against the Person	5	..	5	..

Supreme Court Actions, 1969—continued

Offence	Cases Tried		Convictions	
	Males	Females	Males	Females
Offences Against Property—				
Burglary; Break and Enter; Break, Enter and Steal	148	4	132	4
Receiving, incl. Possession of Stolen Goods ..	12	..	11	..
Fraud and False Pretences	15	1	14	1
Arson, n.e.i.	5	..	5	..
Malicious Damage, Injury to Property or Animals	11	..	10	..
Forgery and Offences Against the Currency—				
Forgery and Uttering Offences	10	2	9	2
All other Offences—				
Escape from Custody	8	..	7	..
Not Elsewhere Specified	4	1	4	1
Total (a)	312	8	284	8

(a) There are fewer Supreme Court cases tried than the number committed from the lower courts would lead one to expect. This is because: (i) *complaints* often embrace several *offences* in the lower courts; (ii) some cases are not proceeded with. Higher court cases often proceed under different offences' titles from those under which the lower court committals were made.

The following table shows the number of convictions in the higher courts over a five-year period:

Supreme Court Cases—Convictions

Offence	1965	1966	1967	1968	1969
Offences Against the Person	64	68	111	76	92
Offences Against Property	97	133	137	150	177
Forgery and Offences Against the Currency	6	1	4	11	11
All Other Offences	r 3	r 2	2	6	12
Total	170	204	254	243	292

The High Court of Australia

This Court was created by the Commonwealth Constitution and it has both original and appellate jurisdiction. It is constituted by the Chief Justice of Australia and six other Justices.

There is an appeal as of right to the High Court from the Supreme Court of the State in any civil matter where the sum involved amounts to at least \$3,000 or where the decision under appeal affects the status of any person under the laws relating to aliens, marriage, divorce, bankruptcy or insolvency. In other cases (including criminal cases) there is an appeal to the High Court if leave or special leave is granted.

Sittings of the High Court of Australia are held in each capital city and one sitting is held in Hobart each year if the volume of business warrants it. Otherwise, Tasmanian cases are usually heard either in Melbourne or Sydney.

Privy Council

An appeal lies direct from the Supreme Court to the Privy Council in a civil action where the amount involved is not less than \$2,000 and in other cases an appeal may be heard by special leave. Special leave may also be obtained to appeal to the Privy Council from a decision of the High Court of Australia. However, as from 1 September 1968 the High Court of Australia became the final court of appeal in all cases involving Commonwealth law (i.e. in litigation involving Commonwealth matters instituted after 31 August, there will be no right of appeal to the Privy Council).

Tribunals

There are many tribunals which are not true courts and the powers and functions of these depend upon the detailed provisions of the particular statute under which they operate. Certain specialised courts have been created by statute. For example, there is the Wardens' Court constituted under the *Mining Act* 1929 and the Licensing Court constituted under the *Licensing Act* 1932.

Coroner's Courts

Coroners are appointed by the Governor and have jurisdiction throughout the State. Under the *Coroner's Act* 1957, a coroner may hold an inquest: (a) concerning the manner of death of any person who has died a violent or unnatural death, who died suddenly without the cause being known, or who died in a prison, or mental institution; at the direction of the Attorney-General, he may also be required to hold an inquest concerning any death; (b) concerning the cause of any fire if the Attorney-General has directed, or has approved a request by the owner or insurer of the property; or at the request of the Fire Brigades Commission or the Rural Fires Board.

The coroner usually acts alone in holding an inquest, but in the case of a death, either the Attorney-General or the relatives of the deceased may request that a four or six-man jury be empanelled. The inquest may be dispensed with and post mortem by a doctor substituted, unless the circumstances of death make an inquest mandatory under the Act.

The duty of the court is to determine who the deceased was, and the circumstances by which he came to his death. Medical practitioners and other persons may be summonsed to give evidence. Viewing of the body is not essential but in the case of the death of an infant in a nursing home, the coroner may also enquire generally into the conditions and running of the institution. On the evidence submitted at the inquest, the coroner can order a person to be committed to the Supreme Court and can grant bail. In the case of murder, a coroner can issue a warrant for apprehension.

Children's Courts

A 'child' in this jurisdiction is one under the age of 17 years and no proceedings can be instituted without the consent of the Director of Social Welfare. The Court, before finally disposing of the case, must receive a report from a child welfare officer, unless the Court considers the offence trivial or the Director decides not to provide one. A child's parent has the right to be heard and to examine and cross examine witnesses, or to be represented by counsel, also a parent can be compelled to attend the hearing if this imposes no unreasonable inconvenience.

In summary proceedings, the Court normally enters a conviction against a child only if it imposes a sentence of imprisonment but there may be special circumstances in some cases which persuade it to record a conviction.

Children under 16 years cannot be sentenced to imprisonment and children of 16 years cannot be sentenced for more than two years, in aggregate. Minimum penalties imposed by statute do not apply to children; for those under 14 years the maximum fine is \$20, and for those over 14 years, \$50. The Court may impose a supervision order to bring the child under the guidance of a child welfare officer or, if over 15 years, of a probation officer (welfare officers *may* supervise children over 15 years if the Court so directs). Alternatively, the Court may declare the child a ward of the State, placing him under the control of the Director of Social Welfare until his 18th birthday, unless sooner released; it may also direct that a ward be committed to an institution.

Neglected or uncontrolled children are in the Court's jurisdiction; it may make a supervision order, impose wardship or bind the parents over to provide proper care and control, and comply with other directions. If parents have contributed to a child's offence, by failing to control the child, they may also be charged, convicted, fined, ordered to pay for damage and obliged to enter into a recognisance for the good behaviour of the child for up to 12 months.

Unlike a Children's Court, the Supreme Court is in no way inhibited in imposing a penalty on a child; in addition to its ordinary sentencing powers, it may make supervision or wardship orders, and commit a child to an institution. If a child is sentenced to imprisonment, the responsible Minister may direct that the sentence be served in a place other than a gaol.

Statistics of offences for which children were reported appear in this chapter under 'Department of Social Welfare'.

Bankruptcy

On 4 March 1968, the Federal *Bankruptcy Act* 1966-1969 (repealing the Act of 1924-1965) came into operation. The Federal Court of Bankruptcy exercises general jurisdiction in N.S.W. and Victoria while the Supreme Court of Tasmania exercises Federal jurisdiction in Tasmania.

Under the new legislation, a person unable to meet his debts may voluntarily present to the Registrar in Bankruptcy a petition against himself and become a bankrupt under section 55; if the Registrar does not accept the petition and refers it to the Court, he may be directed to accept it. A creditor may apply to the court for compulsory sequestration of a debtor's estate where the debt is not less than \$500. Where a debtor becomes bankrupt:

- (i) his property, not being after-acquired property, vests immediately in The Official Receiver in Bankruptcy;
- (ii) his after-acquired property vests in The Official Receiver in Bankruptcy, or if a private trustee has subsequently been appointed, then in that trustee.

A debtor may avoid sequestration, in some circumstances, by authorising a registered trustee to call a meeting of his creditors and take over the control of his property; or by authorising a solicitor to call a meeting of his creditors (Part X). The debtor's property is controlled by the trustee until the creditors resolve otherwise, or the Court orders otherwise, or a deed of assignment or arrangement is executed, or a composition is accepted, or the debtor dies or becomes bankrupt.

A person becoming bankrupt under the new Act may be automatically discharged from bankruptcy after the expiration of five years (section 149) unless discharged earlier by the Court. Undischarged bankrupts at 4 March

1968 are discharged three years later (4 March 1971) or five years from the date of the sequestration order, whichever is the later (unless discharged earlier by the Court). The Registrar, trustee or a creditor may lodge an objection to this type of discharge, and if it is not withdrawn the debtor must apply to the Court under section 150 if he desires to be discharged.

The following table shows the number of bankruptcies and private arrangements together with the assets and liabilities of debtors:

Tasmania—Bankruptcy Proceedings (a)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Bankruptcies and Orders for Administration of Deceased Debtors' Estates—					
Number	103	69	71	100	121
Liabilities \$'000	810	297	299	602	589
Assets \$'000	202	165	101	247	359
Deeds of Assignment, Arrangement, Compositions and Schemes—					
Number	4	1	4	8	13
Liabilities \$'000	174	7	70	553	269
Assets \$'000	32	10	98	287	209
Total—					
Number	107	70	75	108	134
Liabilities \$'000	984	304	369	1,155	858
Assets \$'000	234	175	199	534	568

(a) Under legislation described in the 1968 *Year Book* (1964—4/3/68) and under legislation described herein (4/3/68-30/6/70).

Trade Practices Tribunal

The Commonwealth Parliament passed the *Trade Practices Act* 1965 'to preserve competition in Australian trade and commerce to the extent required by the public interest'; due to constitutional limitation of Commonwealth power, provision was made in the Act for co-operation between the Commonwealth and the States, the provision being that each State could adopt complementary legislation if it so desired. In this way practices in both interstate and intrastate trade would be subject to scrutiny. No State has so far enacted complementary legislation. However, Tasmania, by its *Commonwealth Powers (Trade Practices) Act* 1966, chose to make a constitutional reference to the Commonwealth, enabling the Commonwealth to apply the Federal Act in Tasmania. An amendment to the Commonwealth Act for such extension was made in 1967.

The Commonwealth Act deals with agreements and practices where an element of restriction is involved and defines those which are 'examinable'. It establishes a Register of Trade Agreements to be kept by a Commissioner and obliges parties making examinable agreements to register them (certain agreements relating only to services are exempt). The Commissioner, on the basis of registered information, or of information from any other source, may consider an examinable agreement or a particular practice to contain restrictions *contrary to the public interest*, in which case he may institute proceedings before a Trade Practices Tribunal. It is the task of the Tribunal to determine whether the restrictions are contrary to the public interest; if this is the finding of the Tribunal, it has the power to make an order ending the practice, or restraining all or any of the parties from giving effect to, or enforcing or purporting to enforce, the restrictive agreement.

Where the Tribunal has made a determination regarding an agreement or practice, a party to the proceedings may apply to a Review Division of the Tribunal for an order directing that the determination be reconsidered. Part IX of the Act makes it an offence to engage in collusive tendering or collusive bidding. Amendments in 1966 to the Commonwealth Act made provision among other things, for the control of the operations of shipping conferences. The Commonwealth Act operated from 1 September 1967.

The first proceedings in the Trade Practices Tribunal were commenced by the Commissioner on 29 January 1969 against Tasmanian Breweries Pty Ltd for alleged monopolisation. Following an unsuccessful challenge, in the High Court, to the Tribunal's power to deal with the case, preliminary hearing of proceedings began. They were adjourned indefinitely on 15 April 1970 when the company reached an agreement with the Commissioner which, in general, took the form of an undertaking not to require retailers to sell only the company's draught beer.

The Licensing Court

Prior to 1953, there were forty-nine licensing courts. The Licensing Courts had the right to hear and determine applications for the granting of hotel and club licences; to enforce the provisions of the Act with regard to the forfeiture of licences; to grant provisional hotel licences; and to hear objections against the granting of club licences. They each consisted of a stipendiary magistrate as chairman and two justices of the peace.

With a view to obtaining uniformity of standards and to improving accommodation throughout the State, amendments in 1952 were made to the *Licensing Act* 1932. These made provision for the appointment of a Licensing Court to consist of a stipendiary magistrate as chairman and two government nominees. The Act also empowered the Court to determine the minimum standards of service, management, accommodation, structure and equipment which should apply to hotels, and also the qualifications required by persons holding or applying for licences. Since then, the standard of hotels throughout Tasmania has continually improved.

The following table shows the total hotel bedroom accommodation available to the public during recent years:

Standard of Accommodation—Hotels

Date	Total Number of Bedrooms	Number of Bedrooms Furnished with—	
		Private Bath, Showers, Toilets and Hand-basins	Handbasins with Hot and Cold Running Water
31 Dec.—1957 ..	3,763	182	1,557
30 June—1962 ..	3,672	576	<i>n.a.</i>
1966 ..	3,814	758	2,999
1967 ..	3,599	937	2,164
1968 ..	3,552	955	2,142
1969 ..	3,525	1,073	2,020
1970 ..	3,564	1,117	2,020

Every hotel in Tasmania is visited annually by a member of the Court and the Court's inspectors and the public health inspector make a thorough examination of each hotel prior to the annual sittings at which renewals of licences are considered. Reports are furnished for the information of the Court

and the Tourist Department. An officer of the Fire Brigades Commission also carries out an annual inspection to ensure that each hotel complies with the requirements of the Commission.

The following table shows the licences and club registrations operative:

Licensed Hotels, Restaurants, Clubs and Wholesale Licences

At 30 June	Hotels	Public Houses (a)	Restaurants (b)	Registered Clubs	Wholesale Licences	Total
1965	270	5	..	130	28	433
1966	266	5	..	131	29	431
1967	265	5	..	134	29	433
1968	265	2	..	138	29	434
1969	261	2	11	145	29	448
1970	263	1	16	146	30	456

(a) These licensed premises do not provide accommodation.

(b) Includes motels which have a licence for dining rooms only.

The Ogilvie ministry introduced 10 am to 10 pm bar trading hours before World War II and, in the post-war period, Tasmania's 10 pm closing contrasted with 6 pm closing in S.A., Victoria and N.S.W. However, N.S.W. in the 1950s and, more recently, Victoria liberalised their drinking laws so that S.A. was the only State with 6 pm closing in 1967 (when amending legislation was passed in that State).

In 1967, the Tasmanian *Licensing Act* 1932 was amended to allow 11.30 pm closing on Friday and Saturday nights for those hotels which desire to observe these hours and which obtain the necessary permits; 10 pm closing is now the rule for other nights (excluding Sunday) with provision nevertheless to obtain extension permits for special functions. The permitted age for drinking on licensed premises has been lowered from 21 to 20 years; restaurants complying with defined conditions can now obtain licences to sell liquor (previously diners could take their own liquor to certain restaurants, but not buy it on the premises); licensed restaurants can open till 11.30 pm six nights a week. The type of accommodation, kitchen specifications, etc. for licensed restaurants have to be of a very high order.

The following table shows the estimated consumption of wine and spirits in Tasmania over a five-year period:

Estimated Consumption of Wine and Spirits

Year	Wine		Spirits	
	Total (a)	Per Head of Mean Population	Total	Per Head of Mean Population
	'000 gallons	gallons	'000 proof gallons	proof gallons
1963-64	427	1.17	140	0.38
1964-65	446	1.22	143	0.39
1965-66	472	1.28	147	0.39
1966-67	496	1.33	154	0.41
1967-68	513	1.35	154	0.41
1968-69	551	1.43	154	0.40

(a) Wholesale sales of resident distributors.

Comparative Australian consumption figures per head for 1968-69 were: wine, 1.8 gallons and spirits, 0.4 proof gallons.

As an indication of the national beer consumption, Australia's per capita consumption was 26.5 gallons in 1968-69.

Prisons

General

The establishment, regulation and conduct of prisons and the custody of prisoners in Tasmania are provided for under the *Prison Act* 1868 and 1908. Provision is made for the appointment by the Governor of a Controller of Prisons who is responsible for the supervision of gaols, including the initiation and implementation of correctional programmes for prisoners and staff training schemes.

Two justices are appointed each year to act as Visiting Justices. They visit the prison at least once per month to examine the treatment, behaviour and condition of prisoners, and the condition of the prison. They hear complaints with regard to offences committed in the gaol, and have power to punish offenders either by solitary confinement or by extending the term of imprisonment.

The main prison in Tasmania is at Risdon near Hobart, and has, as an outstation, the Prison Farm at Hayes in the Derwent Valley. The prison at Launceston is limited in function, receiving only persons on remand or sentenced for periods not exceeding seven days.

The following table shows Prisons Department expenditure from Consolidated Revenue:

**Prisons Department—Expenditure From Consolidated Revenue
(\$'000)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Total Expenditure	539	587	683	781	816
Net Receipts (a)	16	18	18	(b) 42	4
Net Expenditure	523	569	664	739	812

(a) From prison industry and gaol farm activities described later in the text.

(b) Includes \$29,000 paid to the Prisons Department from a special State fire insurance trust fund towards the cost of fire damage.

Prisoners Received and Discharged

In the following table giving details of prisoners received into and discharged from Tasmanian prisons, no distinction is made between those on remand and those convicted and sentenced to imprisonment. (Figures for H.M. Prison, Risdon, include those held in custody at the Hayes prison farm.)

Prisoners Received and Discharged, 1968-69

Particulars	H.M. Prison, Risdon		H.M. Prison, Launceston		Total	
	Males	Females	Males	Females	Males	Females
In Custody 30.6.68	309	5	1	..	310	5
Received 1968-69	(a) 974	(a) 44	(b) 229	(b) 8	(c) 1,203	(c) 52
Discharged 1968-69	937	39	221	8	1,158	47
In Custody 13.6.69	346	10	9	..	355	10

(a) Includes transfers from H.M. Prison, Launceston: males 416; females 15.

(b) Excludes transfers to H.M. Prison, Risdon: males 416; females 15.

(c) *Net* receipts, i.e. transfers from Launceston to Risdon counted as Risdon receipts only.

Age of Prisoners

Young offenders account for a high and rising proportion of receivals, as in other countries. The proportion of convicted male prisoners under 25 years was 55 per cent in 1965-66; 57 per cent in 1966-67; 58 per cent in 1967-68 and 59 per cent in 1968-69. The following table shows the age of convicted prisoners received:

Ages of Convicted Prisoners Received at Risdon Gaol, 1968-69

Sex	Age Group (in Years)								Total
	Under 18	18 and 19	20-24	25-29	30-39	40-49	50-59	60 and Over	
Males	81	145	199	81	96	92	22	8	724
Females .. ..	..	9	8	1	4	3	3	2	30
Total	81	154	207	82	100	95	25	10	754

Prisoners' Offences

Just under forty-five per cent of the offences for which people were gaoled in 1968-69 involved 'stealing' and 'breaking and entering'. The following table shows the offences for which convicted prisoners were received:

Offences for Which Convicted Prisoners Were Received at H.M. Prison, Risdon, 1968-69

Offence	Offences by—			
	Males	Females	Persons	
			Number	Proportion of Total
Stealing	643	41	684	per cent 33.8
Breaking and Entering	224	..	224	11.1
Unlawful Use, Motor Vehicle	143	..	143	7.1
Vagrancy	26	7	33	1.6
False Pretences	148	20	168	8.3
Housebreaking	78	..	78	3.9
Breach of Bond	47	..	47	2.3
Breach of Traffic Act	14	..	14	0.7
Driving while Licence Suspended	42	..	42	2.1
Driving without Licence	25	..	25	1.2
Assault	104	..	104	5.1
Failure to Pay Fine	67	..	67	3.3
Damage to Property	20	..	20	1.0
Assaulting Police Officer	25	..	25	1.2
Receiving	33	1	34	1.7
Indecent Assault	8	..	8	0.4
Forgery	18	1	19	0.9
Uttering	15	1	16	0.8
Resisting Arrest	16	..	16	0.8
All Other	254	2	256	12.7
Total (a)	1,950	73	2,023	100.0

(a) The number of offences exceeds the number of prisoners received since some prisoners were convicted of multiple offences.

The next table classifies convicted prisoners according to the number of their previous convictions:

Convicted Prisoners Received in H.M. Prison, Risdon, Classified According to Number of Previous Convictions (a), 1968-69

Particulars	Number of Previous Convictions				Total
	None	One	Two	Three or More	
Prisoners—					
Number Received	200	85	53	416	754
Percentage of Total	26.5	11.3	7.0	55.2	100.0

(a) Previous convictions may not necessarily have involved imprisonment.

Parole and Remission of Sentences

Good conduct remissions of up to 25 per cent of sentence for prisoners sentenced to over three months may be granted by the Governor of the State on the Controller's recommendation. Prisoners may also be paroled on licence for the balance of their sentences.

The Indeterminate Sentences Board is appointed by the Governor of the State to review cases of prisoners serving indeterminate sentences (i.e. those where no fixed sentence is specified and the duration is dependent on the prisoner's conduct, etc.). Such prisoners may be released on a two-year licence and are subject to any conditions the Board may recommend, e.g. the supervision of a probation officer.

The following summary table shows the number of prisoners under the supervision of the Indeterminate Sentences Board:

Prisoners with Indeterminate Sentences at H.M. Prison, Risdon

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Prisoners—					
Received During Year ..	18	16	11	15	9
Discharged During Year ..	24	13	12	19	11
In Custody at 30 June ..	10	13	12	8	6

Capital Punishment

The death sentence has not been carried out in Tasmania since 1946, but judges have pronounced the sentence from time to time; in October 1968, the Attorney-General introduced a bill to abolish capital punishment and this was passed by the Parliament in December of that year.

Risdon Gaol

The Risdon Gaol, with provision for 324 prisoners, was opened in November 1960. Male prisoners were then transferred from the old Hobart Gaol and in June 1963, the Female Prison, the first entirely separate gaol for women to be built in the State, was opened on the Risdon site. The following table shows the daily average and highest number of prisoners in each year at Risdon Gaol over a five-year period:

Number of Prisoners, H.M. Prison, Risdon (a)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Prisoners—					
Maximum Number	273	276	340	352	362
Daily Average	236	239	292	323	333

(a) Includes Hayes Prison Farm with accommodation for 60 prisoners.

The Risdon Gaol incorporates workshops which serve as a basis for vocational and trade training in such subjects as woodworking, tailoring, sheet metal working, bootmaking and breadmaking. Educational services include instruction during working hours for illiterate and semi-literate prisoners; tuition, on two evenings weekly, in general academic subjects to Secondary Schools Certificate standard; correspondence courses in University, Matriculation, Schools Board and various technical and commercial subjects; tuition in English for migrants; and training three nights weekly in art and allied subjects. A classification committee interviews all prisoners on admission and decides on each individual's training programme.

Groups meet regularly for wood carving, art, pottery, toy making, chess and dramatics. Feature and documentary films are screened monthly, and concert parties visit the prison regularly. A comprehensive sports programme is conducted, including athletics, gymnastics, and competitions in cricket, volley ball and basketball.

The State Library of Tasmania helps with the prison library and library officers advise the prisoners on book selection each weekend; 5,000 volumes are immediately available, and a request programme operates. Over 650 books are borrowed from the library weekly.

Prison industries produce articles for government departments and institutions. The following table shows the receipts for prison industries over a five-year period. A new laundry installed in 1963 contributes to receipts from sales and services but the amounts are not a true indication of value to the government, as laundry is processed at a nominal figure for hospitals and other government institutions.

Gaol Suspense Account (Prison Industries)

(\$)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Receipts (a)	66,818	73,246	89,604	70,094	99,852
Paid to Consolidated Revenue..	10,944	13,291	11,136	4,998	1,203

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

Hayes Prison Farm

The Prison Farm at Hayes ('Kilderry') is an outstation of the Risdon Prison. It aims to prepare men for a normal way of life through the operation of the honour system. Up to 60 prisoners who are regarded as being worthy of trust, regardless of their age, length of sentence or type of offence, are held there.

The following table shows the receipts from sale of farm produce and the amounts paid to Consolidated Revenue over a five-year period:

Gaol Farm Suspense Account
(£)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Receipts (a)	54,742	62,590	63,170	60,480	73,687
Paid to Consolidated Revenue..	4,992	4,227	7,341	8,033	2,564

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

The 1,400 acre property has been developed into a model farm with a great diversity of farming activities. These include 65 acres for vegetables; a registered stud of Friesian cattle and Herefords; about 2,000 sheep for wool and fat lambs; a registered herd of Berkshire pigs; poultry; cropping of wheat, oats, lucerne and hay; breeding of children's ponies; hot house cultivation; and an experimental shrub and tree nursery, etc. An additional 310 acres of land was purchased near New Norfolk in May 1969. This property, about one mile north of the Hayes prison farm will function as an annexe to the Hayes property. All prison requirements of milk and butter are met and the surplus is supplied to the Royal Derwent Hospital. Building construction activities and machinery maintenance workshops also provide employment, but this range of prison industries is more limited than at Risdon. Similar educational and recreational facilities are provided.

Adult Probation Service

The Service deals with the problems of re-settlement and re-employment of discharged prisoners. There is a counselling and guidance service so that ex-prisoners may be placed in occupations suited to their talents.

The Hobart and District Civic Rehabilitation Council, the Prisoners Aid Society, the City Mission, the Society of St Vincent de Paul, chaplains of the various churches, and other voluntary aid organisations, give material and moral assistance to serving and discharged prisoners.

The Tasmanian Police Force

History

The evolution of the Tasmanian Police Force is described in the 1967 and 1968 *Year Books*.

The Present Force

Organisation: The Police Department is headed by the Commissioner who is responsible to the Minister for Police. There are four administrative divisions, i.e. Southern, Northern, North-Western and Central, each under the control of a superintendent; and two branches, the Criminal Investigation Branch and the Traffic Branch, each with a superintendent in charge.

Recruitment and Training: Recruits undergo an intensive twelve-week course of instruction which aims to present well informed and efficient police officers to the public. Not only must recruits be successful in the initial examinations, but they must also pass a retention exam if they wish to remain in the service. Officers must qualify by examination before promotion to each rank up to inspector. The Department has sponsored some officers' university courses; men are also sent to police colleges in Sydney and Melbourne.

Criminal Investigation: The Criminal Investigation Branch comprises approximately 130 police officers of whom about 100 are engaged in the active investigation of crime. The Branch also controls the Information Bureau (see *Fingerprinting* and *Laboratory* below) and communications.

Traffic Duties: The Department enforces the traffic regulations for the Transport Department. Traffic control occupies a large part of police time.

Search and Rescue: A search and rescue squad, based in Hobart, equipped for bush and sea search and rescue, cliff rescue, and resuscitation is ready to leave at short notice. The squad is supported by walking clubs and other people in various parts of the State.

Other Duties: Inspection of licensed premises, supervision of gaming, conducting special interviews and inquiries for government departments, and the service of notices and summonses are important police functions.

Radio: Radio is used extensively; since 1954 there has been a direct link-up with the continental States. An intrastate system operates between Hobart, Launceston, Burnie, Queenstown, Oatlands and Deloraine. Mobile radio is installed in all police vehicles and boats. A teleprinter allows direct contact with Interpol, an international police agency, and other States.

Fingerprinting: This is an important aid to criminal investigation. Each year some 2,000 sets of prints are received, checked with the Central Fingerprint Bureau in Sydney and classified. Over 100,000 sets are kept on file.

Laboratory: A modern laboratory equipped with a comparison microscope and other investigation facilities is used by Information Bureau experts for ballistic examination, inspection of documents, file marks, etc. and other evidence of criminal activity. Extensive use is made of photography.

Strength of Force

The following table shows the number of police and expenditure:

Police Force—Number and Cost

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Police Officers (a) no.	633	678	699	703	721
Persons Per Police Officer (a) no.	581	548	538	543	539
Cost (Total Expenditure of Police Department) \$'000	2,675	2,727	3,109	3,541	3,680
Cost Per Head of Mean Population. . . \$	7.30	7.38	8.31	9.33	9.48

(a) At 30 June.

Civil Defence and Emergency Services

Introduction

In 1962, after discussions with the Commonwealth, the State Government agreed to participate in the establishment of a Tasmanian civil defence organisation as a part of an Australia-wide civil defence service, designed to meet a war-time situation. However, the State Government decided to adapt the service to deal with natural disasters as well as war-time conditions.

Structure

Responsibility for establishing the service was divided between Commonwealth, State and local governments. Local government authorities are responsible for: (i) appointing local controllers who have the task of raising and

training volunteer forces; (ii) sponsoring local volunteer groups. Participation by local government authorities is voluntary and at 1 July 1970, 40 municipalities had joined the scheme in Tasmania. Participating municipalities do not have to provide financial assistance but are expected to provide facilities for training purposes and storing equipment.

During peace-time, control of the State Civil Defence and Emergency Services is vested in the Chief Secretary as the Minister responsible for Emergency Services. The Director of Civil Defence and Emergency Services is responsible for the administration of the Service and for implementing government civil defence policy. In the case of war or attack by a foreign power, the Civil Defence Service may be given statutory powers. At a time of natural disaster, the organisation may be called into operation by a decision of State Cabinet or a request from a statutory authority responsible for emergency operations. The Commissioner of Police then assumes responsibility for the co-ordination of the emergency operations.

Floods during 1969-70 caused the Longford Council to call on the local civil defence unit on three separate occasions to supervise and assist with removal and rescue operations. Assistance was also given in search and rescue operations in various parts of the State during the year.

Administrative Structure

Civil Defence administration in Tasmania is organised on a four-level basis: (i) municipal divisions; (ii) regions; (iii) areas; and (iv) State headquarters. Each municipality constitutes a municipal division of which 40 are currently operational. The 'municipal divisions' are allocated on a geographical basis between nine 'regions' which in turn are attached to one of three 'areas'. At the apex of the structure is the State headquarters located in Hobart.

At present, regional commands are bypassed and a direct link exists between the 'area' and the 'municipal division'.

Each area is administered by a full-time area co-ordinating officer who assists volunteer municipal controllers in raising and training divisions.

Recruitment and Training

By July 1970, 1,228 persons had volunteered for service in the 40 municipal divisions. On enlistment, all volunteers are insured against death or injury while engaged in training or participating in emergency operations.

Training is mainly undertaken at the municipal level while instruction courses for controllers, staff officers, instructors and heads of services are conducted at the Australian Civil Defence School located at Mt Macedon, Victoria.

Equipment and Finance

Protective clothing and operational equipment for the units of the various services up to the value of \$20,000 per annum are provided by the Commonwealth Directorate of Civil Defence. State appropriation for civil defence expenditure during 1969-70 was \$47,380.

Fire Prevention and Fire Fighting

Introduction

The area of Tasmania is 26,383 sq. miles (the equivalent of a square with 162-mile sides). Seventy per cent of the State's population is, in Census terms, *urban*, i.e. living in cities or towns with 1,000 or more inhabitants. The

responsibility for fire prevention and fire fighting in the cities and main towns rests with local fire brigades under the general control of a central body, the Fire Brigades Commission of Tasmania.

The balance of the State's population (30 per cent) is, again in census terms, *rural*, i.e. living in townships with less than 1,000 inhabitants or in isolated locations such as farms, milling and logging settlements, mining camps, etc. This rural population is spread over a large area and the type of fire brigade organisation appropriate to concentrated urban settlements cannot be employed; factors of distance, time and finance combine to demand a different mode of approach. The Tasmanian answer has been to set up local rural fire organisations and to co-ordinate their activities through a central body, the Rural Fires Board.

Following the disastrous bushfires of February 1967, the organisation of both types of fire-fighting body was closely examined and certain changes made with a view to securing better co-ordination and increased protection. The changes are described in the sections that follow.

A third relevant authority is the Forestry Commission which is responsible for the fire protection of State Forests and other forested Crown land; the Commission also fights fires on private land if they endanger forests on Crown land.

Fire Brigades Commission of Tasmania

The Commission, established under the *Fire Brigades Act 1945* (as amended) is composed of two representatives of the Minister (the Chief Secretary), three representatives of insurance companies, one representative of city and municipal councils and one representative appointed by the Rural Fires Board. All urban brigades are under the control of a Chief Officer. The system of financing the fire brigades is shown below:

Fire Brigades: Principal Sources of Revenue, 1968-69

Contributions Received by Fire Brigades Commission From:	Receipts (\$)	Distribution Made by Fire Brigades Commission To:	Payments (\$)
State Government	245,925	Fire Brigade Boards	1,093,000
City and Municipal Councils ..	245,925		
Insurance Companies	601,150		
Total	1,093,000	Total	1,093,000

The number of contributing local government authorities in 1968-69 was 31, although the number of fire brigade boards was only 22 (some boards take responsibility for areas lying in more than one municipality, e.g. the Hobart Board with sub-stations in Glenorchy, Clarence and Kingborough). The present contribution formula requires 55 per cent from the insurance companies, and 22½ per cent each from the Government and the local government authorities; the Commission prepares an annual estimate of expenditure so that the level of contributions may be fixed in advance. The loan debt of all fire brigade boards at 30 June 1969 was \$507,842.

At 30 June 1969, the 22 fire brigade boards maintained 36 stations (including sub-stations) and employed 210 permanent firemen (Hobart 127, Launceston 71, Burnie 6, Devonport 6); other firemen, numbering 399, were paid on a part-time basis. In addition, one Hobart sub-station, Fern Tree, situated in forested mountain country, had a volunteer strength of 40. Including

the Fern Tree volunteers, the total firemen (officers and men) in the Brigades numbered 649. The number of firemen employed has increased following a reduction of working hours from 56 to 40 hours in October 1967.

Rural Fires Board

Following the fire disaster of February 1967, an expert committee made recommendations to the Government with respect to future measures on fire prevention and suppression. The report proposes considerable changes in rural fire control and practically all of these were embodied in 1967 amendments to the *Rural Fires Act* 1950. The earlier constitution of the Rural Fires Board is described in the 1968 *Year Book*.

The 1967 Act brings the separate urban and rural fire services and the State Civil Defence and Emergency Services together under the Chief Secretary. The newly-constituted Rural Fires Board, under a chairman appointed by the Governor, consists of sixteen members representing: Forestry Commission (two members); Municipal Association (two members); Police; Fire Brigades Commission; pulp and paper making industry management; sawmilling industry management; Hydro Electric Commission; Fire and Accident Underwriters' Association; Tasmanian Farmers' Federation; Tasmanian Farmers' Stockowners' and Orchardists' Association; Australian Workers' Union; Timber Workers' Union; and Rural Fire Brigades.

Under the new Act, the municipal councils are made responsible for the control of permits for fire use in restricted periods through permit officers (who are not necessarily employees of the councils). Fire use is controlled during only two periods, that is, during *fire danger periods*, when permits are required, and on days of *acute fire danger* when no fires are permitted. These periods are introduced and removed as the seasonal conditions dictate in various parts of the State. The Act requires each municipal council to form a municipal fire committee for the purpose of promoting the formation of rural fire brigades and advising the Board and the council on matters of fire restriction, hazard reduction, the provision of funds for purchase of equipment to be used by rural fire brigades and any other fire control matters. For approved equipment purchases for use by rural fire brigades, the Government contributes a subsidy equal to the sum provided by the municipal council. Areas with particular fire problems and sparse population may be declared as *special fire areas* and be the subject of separate schemes.

The Board has a paid staff of 15, headed by the State Fire Control Officer and includes five Regional Fire Officers. There were 255 rural fire brigades at June 1970. These brigades are composed entirely of registered volunteers, involving 5,600 people. The Board's budget in 1969-70 was \$284,375 comprising: \$170,750 for administrative and field operational expenditure; \$83,625 paid in subsidies for equipment; \$80,000 for mapping and survey investigation and fire fighting in *special areas*; \$50,000 for fire fighting equipment, fire hazard reduction and preparation of access roads in the Hobart special fire area. Half the administrative expenditure of the Board is met by insurance companies insuring rural properties, and half by the Government. Special fire area expenditure is borne by the Government, with remaining expenditure being shared proportionately between the Government and municipalities.

Forestry Commission

The Commission is responsible for the protection of the 2.67m acres of State Forests and of other forested Crown land. Close liaison is maintained with the Rural Fires Board as two members of the 16 man Board are representatives from the Forestry Commission.

In its role as a fire prevention authority the Commission fought 87 fires at a cost of \$18,722 during 1968-69. A total area of 9,600 acres of State forest and Crown land was burnt, of which two-thirds were scrub or waste land. This was the easiest year for forest fire control in the past decade, due mainly to weather conditions.

The following table gives the details for each of the past ten years of the areas burnt within fire perimeters, the number of fires fought and the cost of suppression.

Comparisons of Seasonal Fire Damage

Year	Area Burnt (a)	Fires	Suppres- sion Cost	Year	Area Burnt (a)	Fires	Suppres- sion Cost
	Acres	no.	\$		Acres	no.	\$
1959-60 ..	51,454	233	33,890	1964-65 ..	11,815	146	33,930
1960-61 ..	434,644	479	252,346	1965-66 ..	129,147	317	54,968
1961-62 ..	27,904	137	21,316	1966-67 ..	426,219	264	108,018
1962-63 ..	21,680	126	17,918	1967-68 ..	95,705	230	61,032
1963-64 ..	66,518	252	74,012	1968-69 ..	11,205	87	18,722

(a) Including private property inside the perimeter of fires on which suppressive action was taken.

Chapter 10

LABOUR, WAGES AND PRICES

EMPLOYMENT

Historical

Tasmanian records for the first ninety years give no dissection of the population such that the total number of wage and salary earners can be accurately ascertained. The first census to provide the necessary analysis was that of 1891, the categories used on that occasion and in subsequent censuses being broadly comparable. The composition of the labour force is shown in the following table for each census from 1901 to 1961:

Elements of Labour Force in Censuses of 1901-1961

Census Year	Employer	Self-Employed	Employee	Helper not Receiving Wage or Salary	'Not at Work' (a)	Total in Labour Force	Total Population
1901—Males ..	6,213	9,100	36,063	4,098	1,810	57,284	89,624
Females	462	2,434	10,229	2,071	356	15,552	82,851
Persons	6,675	11,534	46,292	6,169	2,166	72,836	172,475
1911—Males ..	8,477	6,742	40,555	3,916	1,492	61,182	97,591
Females	642	1,249	10,715	411	326	13,343	93,620
Persons	9,119	7,991	51,270	4,327	1,818	74,525	191,211
1921—Males ..	4,445	13,309	42,763	1,875	3,606	65,998	107,743
Females	347	1,593	11,484	67	510	14,001	106,037
Persons	4,792	14,902	54,247	1,942	4,116	79,999	213,780
1933—Males ..	7,277	11,887	38,084	1,752	10,226	69,226	115,097
Females	798	1,423	13,082	116	1,442	16,861	112,502
Persons	8,075	13,310	51,166	1,868	11,668	86,087	227,599
1947—Males ..	6,718	12,522	58,097	997	1,867	80,201	129,244
Females	659	1,198	17,693	86	481	20,117	127,834
Persons	7,377	13,720	75,790	1,083	2,348	100,318	257,078
1954—Males ..	6,886	12,616	72,481	778	1,215	93,976	157,129
Females	788	1,329	21,590	246	279	24,232	151,623
Persons	7,674	13,945	94,071	1,024	1,494	118,208	308,752
1961—Males ..	7,108	11,619	78,863	505	3,194	101,289	177,628
Females	1,113	1,572	25,853	194	896	29,628	172,712
Persons	8,221	13,191	104,716	699	4,090	130,917	350,340

(a) Includes those who stated they were usually engaged in work, but were not actively seeking a job at the time of the census by reason of sickness, accident, etc., or because they were on strike, changing jobs, temporarily laid off, etc. It also includes persons able and willing to work, but unable to secure employment, as well as casual and seasonal workers not actively engaged in a job at the time of a census.

Labour Force and Employment

It is essential to distinguish between 'labour force' and 'employees' since *employment* statistics in this chapter relate mainly to wage and salary earners. Wage and salary earners, however, *are only one component of the labour force* which also comprises employers, self-employed persons, unpaid helpers and unemployed persons. The category 'not at work' shown in the preceding table was first established in the 1947 Census and the comparison with earlier years is approximate only. For further details, see subsequent section headed 'Unemployment'. Data from the 1966 Census could not be included in the table because of a new method of collecting information in that year; the 1966 data are shown in the next section.

Labour Force, 1966 Census

In the 1966 Census, a new set of questions (based on activity in the week before the Census) was asked to establish who should be included in the labour force. The composition was as follows:

Elements of Tasmanian Labour Force, 1966 Census

Sex	Employer	Self-Employed	Employee	Unpaid Helper	Un-employed	Total in Labour Force	Total Population
Males	8,245	9,162	87,572	432	1,146	106,557	187,390
Females	1,759	1,644	35,451	940	971	40,765	184,045
Persons	10,004	10,806	123,023	1,372	2,117	147,322	371,435

The essential difference between the pre-1966 approach to labour force and the 1966 approach was that in pre-1966 censuses, people were invited to classify themselves (e.g. as unemployed, employee, etc.), while in the 1966 Census, people were invited to describe their *activity* in a specific week and the Statistician, using pre-determined definitions, classified them on the basis of their answers.

Briefly, the new questions asked whether the person: (i) Had a job or business of any kind last week (even if temporarily absent from it); (ii) Did any work at all last week for payment or profit (Unpaid helpers who worked were to answer *yes*.); (iii) Was temporarily laid off by his employer without pay for the whole of last week; and (iv) Looked for work last week. (Ways of 'looking for work' were specified on the Census form.)

The 1966 labour force includes all persons answering *yes* to any one of these four questions. The effect of the new definition is to include additional persons in the labour force. This applies particularly to those working part-time (sometimes for only a few hours a week), some of whom in 1961 may not have considered themselves as '... engaged in an industry, business, profession, trade or service'. The main difference in classification between the 1901-1961 table and the 1966 table is the substitution of the category 'unemployed' for the former category 'not at work'.

The total of persons recorded as unemployed in 1966 was compiled from persons answering *no* to questions (i), (ii) and (iii) and *yes* to question (iv).

Monthly Series of Employment Statistics

In this chapter, employment details are shown as from June 1966. The series is based on comprehensive data (referred to as 'benchmarks') derived from the Census of June 1966. Figures for the period subsequent to the Census

of 1966 are estimated from three main sources, namely: (i) current pay-roll tax returns; (ii) current returns from government bodies; and (iii) some other direct current records of employment (e.g. for hospitals), supplemented by estimates of the change in the number of wage and salary earners not covered by the foregoing collections.

The benchmark figures are derived from particulars recorded for individuals on population census schedules, whereas the estimated monthly figures are derived mainly from reports supplied by employers, relating to enterprises or establishments. These two sources differ, in some cases, in scope and in reporting of industry; however, the industry dissection of the benchmark total has been adjusted, as nearly as may be, to an enterprise or establishment reporting basis. The industry classification used throughout the series is that of the Census of June 1966.

Pay-roll tax returns are lodged at present by all employers paying more than \$400 a week in wages (other than certain Commonwealth Government bodies, religious and benevolent institutions, public hospitals and other similar organisations specifically exempted under the *Pay-roll Tax Assessment Act 1941-1970*). At 30 June 1954 this Act required employers paying wages of more than \$160 a week to lodge returns. The exemption limit was raised to \$240 a week from 1 September 1954 and to the present level of \$400 a week as from 1 September 1957.

It should be noted that employees in rural industry and in private domestic service are not included in the estimates because of the inadequacy of current data. The terms 'Employment', 'Number Employed', 'Employees' and 'Wage Earners' used throughout are synonymous with, and relate to, 'Wage and Salary Earners' on pay-rolls or in employment in the latter part of each month, as distinct from numbers of employees actually working on a specific date. They include some persons working part-time.

Figures for current months are subject to revision. As they become available, particulars of employment obtained from other Bureau collections, such as the annual factory census and the censuses and sample surveys of retail establishments, are used to check and, where necessary, to revise estimates in relevant sections.

The following employment series have been revised and are not comparable with figures published in previous Year Books.

The table below gives estimated totals for employees in Tasmania at June and December of each year:

Wage and Salary Earners in Civilian Employment, June and December
(Excluding Employees in Agriculture and Private
Domestic Service, and Defence Forces)
(^{'000})

Year	June			December		
	Males	Females	Persons	Males	Females	Persons
1966	81.6	33.8	115.4	82.9	35.0	117.9
1967	83.2	35.5	118.7	84.3	36.2	120.5
1968	84.7	37.1	121.8	86.4	37.8	124.2
1969	86.5	38.1	124.6	88.0	39.4	127.4
1970	88.5	39.3	127.8			

The detailed study of employment trends requires examination of monthly figures, so the next table has been compiled to show totals of employees for each month:

**Wage and Salary Earners in Civilian Employment, Monthly Estimates
(Excluding Employees in Agriculture and Private
Domestic Service, and Defence Forces)
(^{'000})**

Month	Males			Females			Persons		
	1967	1968	1969	1967	1968	1969	1967	1968	1969
January ..	83.3	84.8	86.3	34.3	36.0	36.7	117.6	120.8	123.0
February ..	83.4	84.9	86.3	34.6	36.5	37.0	118.0	121.4	123.3
March ..	83.7	84.7	86.4	35.2	37.2	37.8	118.9	121.9	124.2
April ..	83.8	85.0	86.6	35.5	37.3	38.2	119.3	122.3	124.8
May ..	83.6	85.1	86.6	35.6	37.3	38.2	119.2	122.4	124.8
June ..	83.2	84.7	86.5	35.5	37.1	38.1	118.7	121.8	124.6
July ..	82.8	84.4	86.2	35.1	36.8	37.8	117.9	121.2	124.0
August ..	82.7	84.5	86.0	35.1	36.5	37.8	117.8	121.0	123.8
September ..	82.8	84.6	86.2	35.1	36.6	38.0	117.9	121.2	124.2
October ..	82.6	84.7	86.5	35.3	36.6	38.1	117.9	121.3	124.6
November ..	83.0	84.9	87.2	35.5	36.8	38.4	118.5	121.7	125.6
December ..	84.3	86.4	88.0	36.2	37.8	39.4	120.5	124.2	127.4

Civilian Employees of Government Bodies

In Tasmania, as in other Australian States, a relatively high proportion of wage and salary earners is employed by government bodies operating at four levels: Commonwealth, State, Local and Semi-Government (with the complication that semi-government authorities may have been created by either the Commonwealth or the State). For the purposes of these statistics, government employees include persons working on government services such as railways, tramways, banks, post offices, power and light, air transport, education (including universities), broadcasting, television, police, public works, government factories, departmental hospitals and institutions, etc., as well as those engaged in administrative services.

The following table shows the number of government employees in Tasmania according to the level of government:

**Civilian Employees of Government Bodies at 30 June
(^{'000})**

Year and Sex	Level of Government			Total
	Commonwealth Government (a)	State Government (a)	Local Government	
1968—Males ..	5.0	18.6	2.3	25.9
Females ..	1.6	6.6	0.3	8.5
Persons ..	6.7	25.1	2.6	34.4
1969—Males ..	5.1	18.6	2.3	26.0
Females ..	1.7	6.4	0.3	8.4
Persons ..	6.7	25.1	2.6	34.4
1970—Males ..	5.2	18.7	2.4	26.3
Females ..	1.7	6.7	0.4	8.7
Persons ..	6.8	25.4	2.8	35.0

(a) Includes semi-government bodies.

The next table shows employees according to private and government sectors:

Total Civilian Employees of Private Employers and Government Bodies at 30 June ('000)

Year	Males Employed By		Females Employed By		Persons Employed By	
	Private Employers	Govt Bodies	Private Employers	Govt Bodies	Private Employers	Govt Bodies
1966	56.6	25.0	26.1	7.7	82.7	32.7
1967	57.9	25.3	27.4	8.1	85.2	33.4
1968	58.8	25.9	28.6	8.5	87.4	34.4
1969	60.5	26.0	29.7	8.4	90.2	34.4
1970	62.2	26.3	30.6	8.7	92.8	35.0

Industrial Classification of Employees

In the following table, wage and salary earners in civilian employment are classified according to industry:

**Wage and Salary Earners in Civilian Employment: Industry Groups and Sub-Groups, June 1970
(Excluding Employees in Agriculture and Private Domestic Service, and Defence Forces)
(‘000)**

Industry Group and Sub-Group						Males	Females	Persons
Forestry, Fishing and Trapping .. ..	..	..	..	..	..	1.0	..	1.1
Mining and Quarrying .. ..	..	..	..	..	..	4.4	0.2	4.6
Manufacturing .. ..	..	..	..	..	..	28.3	7.3	35.6
Electricity, Gas, Water and Sanitary Services .. ..	..	..	..	..	..	3.8	0.3	4.1
Building and Construction .. ..	..	..	..	..	..	12.2	0.3	12.5
Transport and Storage—								
Road Transport and Storage .. ..	..	..	..	..	..	3.0	0.3	3.3
Shipping and Stevedoring .. ..	..	..	..	..	..	2.1	0.1	2.2
Rail and Air Transport .. ..	..	..	..	..	..	1.9	0.2	2.0
Total .. ..	..	..	..	..	..	7.0	0.5	7.5
Communication .. ..	..	..	..	..	..	2.9	1.0	3.8
Finance and Property—								
Banking .. ..	..	..	..	..	..	1.4	0.8	2.3
Other .. ..	..	..	..	..	..	1.6	1.2	2.9
Total .. ..	..	..	..	..	..	3.1	2.0	5.1
Commerce—								
Retail Trade .. ..	..	..	..	..	..	6.0	6.7	12.7
Wholesale and Other Commerce .. ..	..	..	..	..	..	5.5	1.4	6.9
Total .. ..	..	..	..	..	..	11.5	8.1	19.6
Public Authority Activities (n.e.i.) .. ..	..	..	..	..	..	4.0	1.7	5.8
Other Industries—								
Health, Hospitals, etc. .. ..	..	..	..	..	..	1.7	6.1	7.9
Education .. ..	..	..	..	..	..	2.9	4.7	7.6
Amusement, Hotels, Personal Service, etc... ..	..	..	..	..	..	3.1	5.0	8.0
Other (a) .. ..	..	..	..	..	..	2.6	1.9	4.6
Total .. ..	..	..	..	..	..	10.3	17.7	28.1
Grand Total .. ..	..	..	..	..	..	88.5	39.3	127.8

(a) Comprises Law, Order and Public Safety, Religion and Social Welfare; Other Community and Business Services.

The analysis of wage and salary earners by industry groups clearly indicates 'manufacturing' as the predominant activity. Unfortunately, employees in agriculture are excluded from the series so it is not possible to compare employment in primary, secondary and tertiary industries on the basis of the data appearing in the table. ('Employment on Rural Holdings' is described in Chapter 6 but the seasonal character of this work makes it difficult to estimate the level of rural employment in any given month.) Attention is drawn to the relatively minor level of employment in 'Public Authority Activities (n.e.i.)'; the civilian employees of government bodies shown in a previous table have been classified according to their appropriate industry group (e.g. transport, communication, health, education, etc.) and only those not included in a specified group appear in this item.

Industrial Classification of the Labour Force and of Employees

The Census of 30 June 1966 provides an analysis of the total labour force (including those engaged in rural industry); the percentage in each broad category was as follows: *primary production* (fishing, hunting, rural industries, forestry), 11.69; *mining and quarrying*, 2.29; *manufacturing*, 23.05; *electricity, gas water and sanitary services*, 2.72; *building and construction*, 9.70; *transport and storage*, 6.01; *communication*, 2.64; *finance and property*, 3.10; *commerce* (wholesale and retail), 15.59; *public authority (n.e.i.) and defence services*, 3.73; *community and business services (including professional)* (e.g. schools, hospitals, etc.), 11.87; *amusement, hotels and other accommodation, cafes, personal service, etc.*, 5.62; *industry not stated*, 1.99; *total*, 100.00.

As previously explained, wage and salary earners are only one part of the labour force but the analysis in the previous paragraph indicates the importance of tertiary industry in today's community. If the *primary* group is combined with *mining and quarrying*, only 14 per cent of the labour force was engaged in the extraction of raw materials; a further 23 per cent was engaged in manufacturing. In other words, less than 40 per cent of the labour force was engaged in primary and secondary industries as defined for statistical purposes.

The next table specifies the main industrial groups and shows the industrial classification of *civilian employees* at annual intervals:

Wage and Salary Earners in Civilian Employment: Main Industry Groups
(Excluding Employees in Agriculture and Private Domestic Service, and Defence Forces)
(^{'000})

As at 30 June	Mining and Quarrying	Manufacturing (a)	Building and Construct- ion	Trans- port, Storage and Communi- cation	Retail Trade	Wholesale Trade, etc; Finance, Property	Public Authority (n.e.i.); Communi- ty Services, etc. (b)	Amuse- ment, Hotels, Personal Service, etc.
MALES								
1966	3.2	26.2	11.9	9.8	5.9	8.1	9.8	2.2
1967	3.3	26.9	12.1	9.8	5.7	8.2	10.2	2.4
1968	3.9	27.4	11.6	9.9	6.0	8.3	10.5	2.6
1969	4.2	27.8	11.8	9.9	6.0	8.4	10.9	2.7
1970	4.4	28.3	12.2	9.9	6.0	8.4	11.3	3.1

Wage and Salary Earners in Civilian Employment: Main Industry Groups
(Excluding Employees in Agriculture and Private Domestic Service, and Defence Forces)—continued
('000)

As at 30 June	Mining and Quarrying	Manufac- turing (a)	Building and Construct- ion	Trans- port, Storage and Communi- cation	Retail Trade	Wholesale Trade, etc; Finance, Property	Public Authority (n.e.i.); Communi- ty Services, etc. (b)	Amuse- ment, Hotels, Personal Service, etc.
FEMALES								
1966	0.1	6.7	0.3	1.5	6.3	2.9	12.2	3.4
1967	0.1	7.0	0.3	1.5	6.5	3.1	12.9	3.8
1968	0.2	7.0	0.3	1.5	6.7	3.3	13.7	4.1
1969	0.2	7.1	0.3	1.5	6.8	3.4	14.0	4.5
1970	0.2	7.3	0.3	1.5	6.7	3.4	14.5	5.0
PERSONS								
1966	3.3	32.9	12.2	11.3	12.2	11.0	22.0	5.6
1967	3.4	33.9	12.4	11.3	12.2	11.3	23.1	6.2
1968	4.1	34.4	11.9	11.4	12.7	11.6	24.2	6.7
1969	4.4	34.9	12.1	11.4	12.8	11.8	24.9	7.2
1970	4.6	35.6	12.5	11.2	12.7	12.0	25.9	8.0

(a) Includes employees engaged in selling and distribution, etc. as well as those occupied directly in manufacturing activities.

(b) Includes Law and Order, Religion and Social Welfare, Health Services, Education and Other Community and Business Services.

UNEMPLOYMENT

Historical

The total of persons 'unemployed' has been recorded by the Bureau of Census and Statistics at the dates of successive population censuses. The measurement of unemployment is complicated by definitional problems since persons normally in the labour force, but not having a job at the time of a census, may be in this position for reasons other than those associated with scarcity of employment. The following table records data from the Censuses of 1921 and 1933:

Labour Force and Unemployment, Censuses of 1921 and 1933

Particulars	Census, 4 April 1921			Census, 30 June 1933		
	Males	Females	Persons	Males	Females	Persons
Labour Force (a) ..	65,998	14,001	79,999	69,226	16,861	86,087
'Unemployed' ..	3,606	510	4,116	10,226	1,442	(b)11,668
'Unemployed' as Per- centage of Labour Force	5.5	3.6	5.1	14.8	8.6	13.6

(a) Comprises employers, self-employed, employees, helpers and unemployed.

(b) Excludes 4,944 persons (4,193 males) employed part-time, including those on sustenance or relief work. Such persons were classified as employees.

Those describing themselves as unemployed were further invited to state the cause. The result from the Census of 1933 is quoted below:

Causes of Unemployment, Census of 30 June 1933

Cause of Unemployment	Number			Proportion of Total (Per Cent)		
	Males	Females	Persons	Males	Females	Persons
Scarcity of Employment	8,883	1,002	9,885	86.9	69.5	84.7
All Other Causes (a)	1,343	440	1,783	13.1	30.5	15.3
Total	10,226	1,442	11,668	100.0	100.0	100.0

(a) Includes sickness, accident, industrial dispute, voluntarily idle and cause not stated.

From the 1947 Census onwards, the enquiry was broadened to include all persons (usually engaged in industry, business, trade, profession or service) who were out of a job and 'not at work' at the time of the census for whatever reason, including reasons not normally associated with unemployment.

'Not at Work'

In the next table, a summary is made of data from the Censuses of 1947, 1954 and 1961, the principal comparison being the respective levels of the labour force and of those classified 'Not at Work'.

As previously defined, 'Not at Work' includes those who stated that they were usually engaged in work but were not actively seeking a job at the time of the census by reason of sickness, accident, etc. or because they were on strike, changing jobs or temporarily laid off, etc. It includes also persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actually in a job at the time of the census. The numbers shown as 'Not at Work', therefore, do not represent the number of unemployed available for work and unable to obtain it.

The term 'Not at Work' does not apply to those who had a job but happened to be absent from it at census date due to sickness or leave.

Labour Force and Persons 'Not at Work'
Censuses of 30 June 1947, 1954 and 1961

Year and Sex	Labour Force (a)	Persons 'Not at Work'	
		Number	Proportion of Labour Force (Per Cent)
1947—Males ..	80,201	1,867	2.3
Females ..	20,117	481	2.4
Persons ..	100,318	2,348	2.3
1954—Males ..	93,976	1,215	1.3
Females ..	24,232	279	1.2
Persons ..	118,208	1,494	1.3
1961—Males ..	101,289	3,194	3.2
Females ..	29,628	896	3.0
Persons ..	130,917	4,090	3.1

(a) Comprises employers, self-employed, employees, helpers and those 'Not at Work'.

'Unemployed' (1966)

In the 1966 Census, the following new question was asked: Did the person look for work last week? Answer *yes* or *no*. (*Note: 'Looking for work' means; (i) being registered with the Commonwealth Employment Service; or (ii) approaching prospective employers; or (iii) placing or answering advertisements; or (iv) writing letters of application; or (v) awaiting the result of recent applications.*)

After the exclusion of persons who were already employed, but who were seeking alternative employment, the following data were obtained from this new approach:

Labour Force and Unemployed Persons, 1966 Census

Sex	Labour Force	Unemployed	
		Number	Proportion of Labour Force (Per Cent)
Males	106,557	1,146	1.1
Females	40,765	971	2.4
Persons	147,322	2,117	1.4

It should be noted that 'Not at Work' in the 1947-1961 table is different in concept from the 'Unemployed' category in the 1966 table.

Registrations With Commonwealth Employment Service

The Commonwealth Employment Service (C.E.S.) was established by Federal legislation under Section 47 of the *Re-establishment and Employment Act* 1945, and under the *Social Services Legislation Declaratory Act* 1947. The principal function of this service is to provide facilities in relation to employment for the benefit of persons seeking to change or obtain employment, or seeking to engage labour, and to provide facilities to assist in bringing about a high and stable level of employment throughout the Commonwealth.

The C.E.S. functions within the Employment Division of the Department of Labour and National Service on a decentralised basis. The central office is in Melbourne and there is a regional office in Hobart with district employment offices in Hobart, Launceston, Glenorchy, Devonport and Burnie, and agencies at Smithton and Huonville.

All applicants for unemployment benefits provided under the Commonwealth *Social Services Act* 1947-1969 must register at a district employment office or agency of the C.E.S. which is responsible for certifying whether or not suitable employment is available. Claims for unemployment benefits are paid by the Department of Social Services; country residents remote from an employment office or agency may claim by mail.

The establishment of the C.E.S. created two new methods of measuring fluctuations in unemployment:

- (1) the number of persons registered for employment with the C.E.S. at the end of each month; and
- (2) the number of persons receiving unemployment benefit from the Department of Social Services at the end of each month.

'Registered for Employment'

In the following table, the persons shown are those who claimed, when registering with the C.E.S., *that they were not employed* and who were recorded on the last Friday in the month as unplaced. The count includes those referred to employers and those who may have obtained employment without notifying the C.E.S.; persons receiving unemployment benefit are included.

**Persons Registered for Employment With Commonwealth Employment Service
At June and December of Each Year (a)**

Year	On Register, June			On Register, December		
	Males	Females	Persons	Males	Females	Persons
1960	1,389	815	2,204	1,581	1,371	2,952
1961	2,328	885	3,213	3,136	2,150	5,286
1962	2,476	1,133	3,609	2,956	2,356	5,312
1963	2,112	1,315	3,427	2,713	2,210	4,923
1964	1,812	1,156	2,968	1,860	1,598	3,458
1965	1,260	975	2,235	1,426	1,350	2,776
1966	849	846	1,695	1,447	1,260	2,707
1967	1,157	959	2,116	1,716	1,348	3,064
1968	1,145	943	2,088	1,786	1,314	3,100
1969	1,305	815	2,120	1,863	1,612	3,475
1970	1,160	728	1,888			

(a) Recorded as unplaced on the Friday nearest the last day of the month.

In interpreting the level of registration, account should be taken of the fact that registration is a *voluntary act*. Thus, whilst an increase in registrations may normally be taken to indicate an increase in unemployment, theoretically, at least, it could merely indicate wider use of the facilities offered by the C.E.S.

The table that follows has been compiled to show the number registered for employment at the end of each month. The monthly figures are subject to pronounced seasonal influences, the most obvious being the effect of school-leavers on registrations in December and January.

**Persons Registered for Employment With Commonwealth Employment Service
At End of Each Month (a)**

Month	1968			1969			1970		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
January ..	1,679	1,494	3,173	1,934	1,405	3,339	2,047	1,518	3,565
February ..	1,114	1,276	2,390	1,397	1,231	2,628	1,626	1,475	3,101
March ..	714	921	1,635	1,057	1,103	2,160	843	1,031	1,874
April ..	733	981	1,714	1,092	865	1,957	839	729	1,568
May ..	1,017	905	1,922	1,247	809	2,056	919	678	1,597
June ..	1,145	943	2,088	1,305	815	2,120	1,160	728	1,888
July ..	1,117	816	1,933	1,407	821	2,228	1,194	702	1,896
August ..	1,195	826	2,021	1,388	782	2,170	1,142	662	1,804
September ..	1,066	826	1,892	1,326	775	2,101	1,209	761	1,970
October ..	1,058	758	1,816	1,041	761	1,802	1,101	753	1,854
November ..	1,825	1,522	3,347	922	816	1,739	996	781	1,714
December ..	1,786	1,314	3,100	1,863	1,612	3,475	1,791	1,376	3,167

(a) At Friday nearest last day of month.

Persons Receiving Unemployment Benefit

It is possible for a person to register as unemployed but make no claim for unemployment benefit. On the other hand, a person claiming unemployment benefit is required to register for employment. The next table gives details of persons receiving unemployment benefit each month:

Monthly Number of Persons Receiving Unemployment Benefit (a)

Month	1963	1964	1965	1966	1967	1968	1969	1970
January ..	1,186	1,191	876	404	452	536	648	634
February ..	1,093	1,159	828	312	388	474	543	568
March ..	964	885	542	217	334	361	332	404
April ..	1,106	907	538	219	315	396	410	349
May ..	1,272	1,171	728	311	380	456	499	348
June ..	1,777	1,399	926	433	526	635	600	437
July ..	1,995	1,702	937	512	597	642	714	544
August ..	1,948	1,732	813	494	620	667	681	561
September ..	1,939	1,595	763	470	533	615	628	540
October ..	1,669	1,395	557	453	419	565	481	473
November ..	1,447	1,115	484	404	432	575	544	410
December ..	1,173	1,060	465	434	536	658	621	594

(a) Number at the last Saturday of month. Source: Department of Social Services.

The number of males and females in receipt of unemployment benefit is shown for June of each year:

Persons Receiving Unemployment Benefit At June (a)

Particulars	1963	1964	1965	1966	1967	1968	1969	1970
Males ..	1,123	905	517	224	325	334	381	290
Females ..	654	494	409	209	201	301	219	147
Persons ..	1,777	1,399	926	433	526	635	600	437

(a) Number at the last Saturday of June in each year. Source: Department of Social Services.

Comparison of Unemployment Data

The following table shows those classified as 'Not at Work' at the Census of 1961, those unemployed at the Census of 1966 and also other measures of unemployment:

Unemployed Persons, Persons Registered for Employment and
Persons Receiving Unemployment Benefit, 1961 and 1966

Particulars	June 1961			June 1966		
	Males	Females	Persons	Males	Females	Persons
CENSUS OF 30 JUNE						
Unable to Secure Employment (a)	2,085	507	2,592	1,146	971	2,117
Temporarily Laid Off	376	81	457			
Illness	398	156	554			
Accident	106	10	116			
Industrial Dispute.. ..	4	1	5			
Other	225	141	366	n.a.	n.a.	n.a.
Total 'Not at Work'.. ..	3,194	896	4,090	n.a.	n.a.	n.a.

**Unemployed Persons, Persons Registered for Employment and
Persons Receiving Unemployment Benefit, 1961 and 1966—continued**

Particulars	June 1961			June 1966		
	Males	Females	Persons	Males	Females	Persons
DEPARTMENT OF LABOUR AND NATIONAL SERVICE						
Registered for Employment (b) ..	2,328	885	3,213	849	846	1,695
DEPARTMENT OF SOCIAL SERVICES						
Receiving Unemployment Benefit (c)	1,060	276	1,336	224	209	433

(a) Figures for 1966 correspond with 'unemployed'.

(b) At Friday nearest last day of June.

(c) At last Saturday of June.

The comparison for 1954 was as follows: (i) 'unable to secure employment' (Census): males, 329; females, 74; persons, 403; (ii) 'registered for employment': males, 438; females, 117; persons, 555; (iii) 'receiving unemployment benefit': males, 96; females, 13; persons, 109.

INDUSTRIAL LEGISLATION AND CONDITIONS

Apprenticeship

Apprenticeship Commission: The *Apprentices Act* 1942 set up a statutory authority, the Commission, to: (i) encourage, regulate and control training in proclaimed trades; (ii) assist youths towards successful trade courses; and (iii) provide properly trained craftsmen for industry. The Commission, which meets each month, consists of two representatives of trades unions, two of employers' organisations and the President, all members being appointed for a three-year term. To keep the Commission up-to-date with the latest developments, Trade Advisory Committees have been formed for particular industries, with both employers and employees represented.

Apprentices are trained at work and at technical classes, and supervisors report on the effectiveness of the training; supervisors also give on-the-spot advice to employers and apprentices where their mutual obligations are concerned and refer matters that cannot be settled in this way to the Commission for decision.

Apprenticeships: An applicant must be at least 15 years of age and must have the educational qualifications deemed necessary for apprenticeship in the chosen trade; the Commission has the right to decide if an employer is suitable for training apprentices and no apprenticeship may be commenced without its consent.

The apprentice serves a probationary period before a contract (indentures) is made with the employer, and registered with the Commission. The Commission determines disputes about the contracting parties' rights, duties and liabilities and no apprenticeship may be terminated, suspended or assigned other than by its authority; when an apprenticeship has been completed, the employer and the Commission certify to this effect. Where apprentices are required to undertake technical training, either at technical classes or by

correspondence, instruction is mandatory. Apprentices attend technical classes for eight hours per week during working hours without loss of pay. The progress apprentices make is conveyed to the Commission by employers' annual reports and technical colleges' terminal reports; unsatisfactory reports are investigated.

Apprentices are encouraged in the following ways: (i) by payment of *efficiency allowances* for annual examinations passed successfully in the allotted time; (ii) by *certificates of efficiency* for apprentices successfully completing the mandatory trade course of technical instruction; (iii) by reducing the apprenticeship term by one year in some cases, where the qualifying trade course is completed in the allotted time; (iv) by the award of bursaries.

Four bursaries (two \$300, two \$150) are awarded each year to outstanding apprentices, and a fifth bursary (\$450) is awarded to 'The Apprentice of the Year'. These bursaries are given to assist the most promising apprentices to secure wider trade experience with another employer as part of the apprenticeship training, either in Tasmania, or another State. Arrangements are made by the Commission to suit the bursary holders' wishes.

Numbers of Apprentices: The following table shows the number of apprentices in Tasmania and also details of new apprenticeships registered and apprenticeships completed:

Number of Apprentices				
Particulars	1966-67	1967-68	1968-69	1969-70
Number at 30 June (a)—				
Indentured Apprentices	3,268	3,325	3,470	3,585
Apprentices on Probation	364	452	401	295
Total	3,632	3,777	3,871	3,880
During Year—				
New Apprenticeships Registered ..	1,049	927	1,025	1,034
Apprenticeships Completed	645	704	705	713

(a) Distributed in proclaimed trades; approximately 130 had been proclaimed at 30 June 1970

Industrial Accidents

Source of Statistics: Industrial accident statistics in Tasmania are compiled from returns submitted under the *Workers' Compensation Act* by insurance companies, self-insurers and State Government departments. Among workers excluded from coverage are employees of the Commonwealth, police officers and self-employed persons. (See 'Workers' Compensation' later in this chapter.)

Definition: An industrial accident is defined as a work injury causing either death, or absence of the injured person from work for one day or more. For statistical purposes, an accident causing injury to more than one person is counted as more than one accident.

Accidents: In 1967-68, there were 9,000 industrial accidents of which 29 were fatal; 8,189 involved males and 811 involved females. The total time lost from non-fatal accidents amounted to 16,963 weeks of five days (or approximately 346 'worker years').

The most common accident factors in the case of males were: manual handling, 32.6 per cent; persons falling, slipping, stepping or striking against objects, 26.6 per cent; falling objects, earth and flying objects, 15.9 per cent.

Claims and Premiums: In 1968-69, insurers under the *Workers' Compensation Act* paid \$3.40m in premiums. Insurance companies paid out \$1.95m in claims.

Industrial Safety and Accident Prevention

Responsibility: The Department of Labour and Industry is concerned with industrial safety and accident prevention, and discharges this function with the knowledge that there are approximately 9,000 accidents involving lost time each year among the population covered by the *Workers' Compensation Act*.

Cause of Industrial Accidents: Two major factors are held to underly most industrial accidents, namely: (i) unsafe working conditions; (ii) unsafe actions; in some accidents, both factors may be operative.

Prevention: Prevention obviously has a two-fold aspect: (i) inspection programmes aimed at pin-pointing unsafe working conditions; (ii) education and training designed to eliminate unsafe actions.

Training: The problem of training is basically one of educating supervisors and foremen since an attitude of 'safety consciousness' has to start with management. Formal training in industrial safety and accident prevention is available at Hobart and Launceston Technical Colleges in two-year four-subject courses. Informal training is arranged by the Department of Labour and Industry, the two-day courses available being based on the concept of 'training within industry'. Single lectures on industrial and farm safety are also available and the Department makes arrangements to provide lecturers on request.

Safety Officers: It is expected that large undertakings will have their own specialists concerned with safety matters. However, government safety officers are available to industries which may use their services for a short period. Their function is purely advisory and they assist organisations which wish to stress safety or to reduce their accident rates.

Research Facilities: The Department carries out a safety research programme. A comprehensive classification of safety data and information is maintained from local, interstate and overseas sources.

Workers' Compensation

Legislation: Workers' compensation legislation in Tasmania was first introduced in 1910 but it was not until 1927 that the Parliament introduced the principle of compulsory insurance against the risk of personal injury being caused to workers in the course of their employment. The machinery for compulsory insurance and compensation is embodied in the *Workers' Compensation Act 1927*, as amended.

Purpose and Limitations: The principle of the Act is provision for compensation on the death or disablement of a worker, if occasioned by personal injury caused in the course of employment. In 1966, the Act was amended to extend compensation cover for injuries sustained by a worker travelling in either direction between his residence and place of employment. The Act provides that this cover to and from work applies only for reasonably direct journeys, except for breaks or deviations connected with the worker's employment. Self-inflicted injuries are excluded and certain limitations are applied where serious or wilful misconduct is involved.

Monetary benefits have fixed limits. Over and above weekly payments during incapacity and any lump sum entitlement for scheduled injuries, all reasonable costs of medical, hospital, nursing and ambulance services, and in the event of death, the reasonable costs of burial or cremation, are paid up to a maximum of \$2,500.

Non-contributory Basis: The Act is non-contributory, i.e. the worker does not pay into any fund for the provision of benefits. The employer is obliged to insure with an approved insurance company against the liability to compensation, except in certain cases where he is allowed to carry his own risk.

In any case where an employer has no paid up insurance policy, where the employer cannot be found or where the employer or his insurance company has become insolvent, the worker may claim against a 'nominal insurer' as if he were the employer.

Amounts paid by the 'nominal insurer' are provided by all insurance companies carrying on Workers' Compensation business. Each company is required to contribute to these types of claim in proportion to the premium income derived from policies effected during the preceding year.

Compensation on Death: Where death results from an injury, the compensation payable to dependants wholly dependent on the worker's earnings is 284 times the current Hobart base rate, plus seven times the current Hobart base rate for each worker's child under 16 years at the date of injury. Partial dependants are entitled to proportionate amounts.

Base Rate means an amount 40 cents below the minimum weekly wage payable to an unskilled adult male employed at Hobart under the Federal Metal Trades Award (in January 1970, the minimum was \$42.60).

Weekly Payments During Incapacity: When the worker is totally incapacitated, the following weekly payments apply: (i) in respect of the worker—70 per cent of the base rate; (ii) in respect of a dependent wife—17 per cent of the base rate; (iii) in respect of a dependent child under 16 (or a full-time student under 21)—nine per cent of the base rate. The application of these formulae, however, is subject to restrictions set out in the next section headed 'Maximum Limits of Weekly Payments'.

When a worker is partially incapacitated, he receives the rates appropriate to total incapacity reduced by application of the following factor:

$$\frac{\text{Loss of Weekly Earnings}}{\text{Average Weekly Earnings}}$$

('Average weekly earnings', in this context, refers to his earnings before the date when the injury was sustained.)

Maximum Limits of Weekly Payments: The worker's average weekly earnings before injury are taken into account in fixing maximum weekly compensation payments, the formulae being as follows (with B as base rate):

- (i) worker's average weekly earnings not greater than $B \times 1.20$; maximum payment not to exceed 85 per cent of his average weekly earnings;
- (ii) worker's average weekly earnings between $B \times 1.20$ and $B \times 1.36$; maximum payment not to exceed the base rate plus two per cent;
- (iii) worker's average weekly earnings greater than $B \times 1.36$; maximum payment not to exceed 75 per cent of his average weekly earnings.

In cases of partial or total incapacity of any worker, the total liability of an employer in making weekly compensation payments is limited to 284 times the current Hobart base rate.

Lump Sum Payments: In addition to weekly incapacity payments, lump sum payments are made in respect of the loss of members of the body or of bodily powers of function. In the Act, specific injuries are listed and the single

amount payable is related to the current Hobart base rate (specified as B in the following examples): (i) loss of both feet, $B \times 284$; (ii) loss of leg, $B \times 138$; (iii) loss of thumb, $B \times 51$; (iv) loss of great toe, $B \times 35$, etc. Where more than one of these injuries are suffered in the same accident, a maximum payment equal to $B \times 532$ may be paid.

Factory Legislation and Inspection

Legislation: Working conditions in factories in Tasmania are covered under the *Factories, Shops and Offices Act 1965*, as amended, which makes provision with respect to the health, welfare, safety, and working conditions of persons employed in factories, shops, and offices and the sanitation of factories, shops, and offices, and, until 1968, matters such as trading hours of shops, etc. Factories are designated in two classes: (a) premises in which four or more persons including the occupier are employed ('occupier' in this context may mean the employer, manager, foreman, agent or other person apparently in charge); (b) a small factory where less than four are employed.

Registration Fees: All factories are required to register with the Department of Labour and Industry; fees date from 1 January each year. Fees for registration range from \$2 for small factories, up to \$40 for factories employing one hundred persons, and \$20 for each additional hundred.

New Factories: The *Local Government Act 1962* requires that plans and specifications for proposed new factory buildings be submitted to the Department of Labour and Industry before being approved by the local government authority. This ensures compliance of the proposed factory buildings with regulations in regard to natural lighting, ventilation, fire exits, fire protection, stairs, access ladders, platforms, change and meal rooms, etc.

Application for Registration: Following application to the Secretary for Labour for registration of premises to be used as a factory, an inspection is made. If the premises are suitable without alteration, a certificate of registration is issued. If alterations are required, a permit to occupy may be issued for a limited time, while renovations, to comply with the Act's requirements, are made. Once the factory is operating, a further inspection is made to study processes and working conditions. Any unsafe situations and practices are drawn to the attention of management.

Inspection: After the initial registration, routine inspections are made by officers of the Department to remedy or prevent unsafe conditions or unsafe practices which may have developed. Particular attention is given to overcrowding, ventilation, natural and artificial lighting, conditions of floors, etc. Access ladders and platforms are checked for compliance with prescribed standards. If contamination of the atmosphere by dust or toxic fumes is present, means of removal are studied. Safe handling and storage of dangerous substances; the provision of fire protection, fire exits, escapes and exit drills; adequacy of sanitary conveniences, washing, change and meal rooms; the provision of safety equipment, etc. require periodic checking.

Accident Reports: Where accidents involving the use of machinery incapacitate workers for seven days or more, factory management is required to notify the Department. These accidents are investigated in an endeavour to eliminate recurrences. See 'Industrial Safety and Accident Prevention' in this chapter.

Construction Sites: Regulations also apply to working conditions on construction works and provide for suitable sanitary, washing and general amenities, in addition to general safety precautions. Where persons are required

to work on any construction works at a height of not less than 20 feet above the ground or at a depth of not less than five feet below ground level, the provision of safety helmets is compulsory.

The Inspection of Machinery

Legislation: Generally, the *Inspection of Machinery Act* 1960, as amended, applies to all machinery of one or more horsepower used in manufacturing or industrial processes. Machines not covered by the Act may be made subject to the Act by proclamation. The Act specifically includes boilers, pressure vessels, lifts and cranes. The Department of Labour and Industry is responsible for application of the Act which is administered by a chief inspector and district inspectors at Hobart, Launceston and Burnie.

Machinery Inspection: An owner (defined in the Act as a person, not necessarily the owner, who has the control of or is in charge of machinery) acquiring machinery as defined in the Act is required to notify the nearest district inspector to obtain a certificate of safety. Inspection may reveal the need for additional safeguards before permission can be given to operate the machine; alternatively the owner may be given a set period in which to comply.

All machinery subject to the Act is inspected annually and all safeguards checked for efficient working and adherence to safety standards. Defects are pointed out to the management and, where necessary, formal notice may be served. If the inspection is satisfactory or, alternatively, when the defects are remedied, the certificate of safety is renewed.

Lifts Inspection: Lifts, cranes and hoists, from an inspection point of view, are treated as machinery but there is the additional requirement that design approval must be obtained before construction begins; tests, including beam deflections under load, are made on completion.

Boilers Inspection: Before boilers or pressure vessels are installed, the design must be approved by the Chief Inspector and conform with specified Australian or overseas standards. Inspections are made on installation and thereafter annually, unless a special investigation is required arising from plant modification, accidents or from employers' or employees' requests.

Shop Trading Hours

Introduction

The first Tasmanian *Shops Act* 1911 regulated hours of trading, introduced a five and a half day shopping week and limited working hours for females and children. Amendments to the *Shops Act* 1925 (made in 1937) had the effect of introducing a five-day shopping week into the City of Hobart and the Municipality of Glenorchy; in the rest of the State, the five and a half day shopping week continued.

Extension of Saturday Closing

The *Factories, Shops, and Offices Act* 1958, as amended in 1965, extended Saturday shop-closing to those areas of the municipalities of Clarence and Kingborough within six miles radius of Hobart G.P.O. This enlargement of the area of Saturday closing operated from 1 January 1966 and was to expire on 31 December 1967 unless new legislation continued it. Due to a deadlock between the two houses of the Tasmanian Parliament in December 1967, the only legislation upon which agreement could be reached was for the continued rostering of petrol stations and, as from 1 January 1968, all restrictions on shop trading hours ceased.

Position in 1968

Despite the lapse of all restrictions from 1 January 1968, there has been little evidence of shopkeepers varying their trading hours; nor, in the Hobart zone, is there any sign of a return to general Saturday morning trading. The Saturday closing tradition in most of the zone dates from 1937, and the explanation appears to be that Hobartians, as shopkeepers, shop assistants and customers, have come to accept it as the normal pattern.

In January 1968, the Retail Grocers' Wages Board rejected an employees' application for increased penalty rates (e.g. treble time for Saturday and Sunday work). The employees claimed that it was the responsibility of the Wages Board to protect employees who might be required to work extraordinary hours introduced following the lapsing of the Act. While the employees failed to obtain the quantum of penalty rates specified in their claim, some upward variations were embodied in the new determination, the most important being a double time provision for all Saturday work in the Hobart zone (as compared with a $1\frac{1}{2}$ time formula for Saturday morning work in Launceston).

In November 1968, the Drapers' Wages Board met to consider penalty rates for Saturday, Sunday and holiday work. As a result of this Board's decisions, payments for Saturday work, in both Hobart and Launceston, have been increased to $2\frac{1}{2}$ times the ordinary rate, provided that the hours so worked form part of the employee's week of forty-hours. If the hours worked are additional to a forty-hour week, payment is at the rate of $1\frac{1}{2}$ times the ordinary rate for the first three hours and double time thereafter. This formula has since been adopted by other Boards in the retail trade.

Petrol Filling Stations

Ordinary permitted hours are 6.30 am to 7.30 pm on week days (with an extra two hours on Friday evening) and 12.30 pm closing on Saturdays and public holidays. However, a system operates to give the public an opportunity to buy petrol outside these hours and on Sundays at rostered filling stations.

TRADE UNIONS

Details of membership of trade unions are collected at 31 December each year. The following table shows details of the number of unions and the number of members in Tasmania from 1939, as well as the annual percentage increase for the past decade:

Trade Unions: Numbers and Membership

Year Ended December	Number of Separate Unions	Number of Members ('000)	Percentage Increase in Membership (a)
1939	79	22.1	..
1949	97	40.7	..
1955	101	51.4	..
1960	101	56.0	3.5
1962	103	57.3	0.7
1964	111	59.9	4.2
1965	109	63.4	6.0
1966	110	65.5	3.2
1967	107	68.1	4.0
1968	112	68.2	0.1
1969	112	69.9	2.4

(a) On preceding year.

Details of the numbers and membership of trade unions in the various industry groups are shown below. However, this table does not provide a precise classification because where the members of a union are employed in a number of industries, they have been classified to the predominant industry covered by that union.

Trade Unions: Number and Membership by Industry Group

Year Ended December	Manufacturing	Building and Construction	Transport	Public Authority (a)	Other (b)	All Groups
NUMBER OF SEPARATE UNIONS						
1962	30	6	13	28	26	103
1963	29	6	13	29	26	103
1964	33	6	16	28	28	111
1965	32	6	15	28	28	109
1966	32	6	15	27	30	110
1967	29	6	14	28	30	107
1968	31	6	14	29	32	112
1969	30	6	14	29	33	112
NUMBER OF MEMBERS (^{'000})						
1962	19.7	4.8	6.1	14.0	12.7	57.3
1963	19.5	4.3	6.3	14.5	12.8	57.4
1964	19.4	4.4	6.4	15.2	14.4	59.9
1965	21.2	4.7	6.7	15.6	15.3	63.4
1966	22.0	4.8	6.6	15.8	16.4	65.5
1967	22.6	4.5	6.7	16.8	17.6	68.1
1968	22.4	4.3	6.9	17.3	17.3	68.2
1969	24.0	4.3	6.6	17.9	17.0	69.9

(a) Includes communication and municipal, etc.

(b) Includes: agriculture, etc.; mining and quarrying; banking; insurance; clerical, wholesale and retail trade; amusements; hotels; personal service, etc.; and community and business services.

PRICES

Retail Prices and Price Indexes

General

The description of price indexes that follows is, in the main, an abridgement of the text appearing in the *Labour Report* of the Commonwealth Bureau of Census and Statistics; this report is a basic document in any serious study of official price indexes. A more detailed account appears in the *1967 Year Book*.

Collection of Retail Price Information

Retail prices of food and groceries and average rentals of houses for periods extending back to the year 1901 were collected by the Commonwealth Statistician. As far back as 1856, the average retail prices of provisions at Hobart were published in the *Statistics of Tasmania*.

Retail prices of a more extensive range of commodities (including clothing) and certain services in common demand have been ascertained at frequent and regular intervals by the Commonwealth Statistician since 1923. Comparable information is available for the month of November in each year from 1914 to 1922 for each of the six capital cities.

Retail Price Index Numbers from 1901

The index numbers that follow are presented as a continuous series, but they give only a broad indication of long-term trends in retail price levels. They are derived by linking a number of indexes that differ greatly in scope. The successive indexes used are: 1901-1914, the 'A' Series; from 1914 to 1946-47, the 'C' Series; from 1946-47 to 1948-49, a composite of Consumer Price Index Housing Group (partly estimated) and 'C' Series excluding rent; and from 1948-49, the Consumer Price Index. It should be noted that this long-term series is for the six capital cities combined, *not for Hobart alone*.

Retail Price Index Numbers from 1901
Six State Capital Cities Combined
(Base: Year 1911 = 100)

Year	Index Number	Year	Index Number	Year	Index Number	Year	Index Number
1901 ..	88	1922 (a) ..	162	1938 ..	149	1954 ..	386
1907 ..	90	1923 ..	166	1939 ..	153	1955 ..	394
1908 ..	95	1924 ..	164	1940 ..	159	1956 ..	419
1909 ..	95	1925 ..	165	1941 ..	167	1957 ..	429
1910 ..	97	1926 ..	168	1942 ..	181	1958 ..	435
1911 ..	100	1927 ..	166	1943 ..	188	1959 ..	443
1912 ..	110	1928 ..	167	1944 ..	187	1960 ..	459
1913 ..	110	1929 ..	171	1945 ..	187	1961 ..	471
1914 (a)	114	1930 ..	162	1946 ..	190	1962 ..	469
1915 (a)	130	1931 ..	145	1947 ..	198	1963 ..	472
1916 (a)	132	1932 ..	138	1948 ..	218	1964 ..	483
1917 (a)	141	1933 ..	133	1949 ..	240	1965 ..	502
1918 (a)	150	1934 ..	136	1950 ..	262	1966 ..	517
1919 (a)	170	1935 ..	138	1951 ..	313	1967 ..	534
1920 (a)	193	1936 ..	141	1952 ..	367	1968 ..	548
1921 (a)	168	1937 ..	145	1953 ..	383	1969 ..	564

(a) November; remaining figures are averages for the respective years.

Consumer Price Index

Introduction: The Consumer Price Index was first compiled in 1960, retrospective to the September quarter 1948. It replaced both the 'C' Series Retail Price Index and the Interim Retail Price Index in official statistical publications of the Bureau. The title 'Consumer Price Index' is used for purposes of convenience and does not imply that the new index differs in definition or purpose from previous retail price indexes. A longer but more completely descriptive title would be 'Consumer Series Retail Price Index Numbers'. For practical purposes, the terms 'retail prices' and 'consumer prices' are synonymous. The Consumer Price Index is designed to measure quarterly variations in retail prices of goods and services representing a high proportion of the expenditure of wage earner households in the aggregate.

Investigations revealed that the incidence and frequency of changes in the pattern of household expenditure since 1950 were such as to render it necessary to construct not one, but a *series of new indexes* introducing additional items and changes in weighting patterns at short intervals between 1949 and 1960. For this period, to obtain a continuously representative measure of retail price change, these now necessarily replace the types of indexes with a constant list of items and a constant set of weights which were kept unchanged for extensive periods. The Consumer Price Index therefore consists of a sequence of short-term retail price indexes chain-linked at June quarter 1952, June quarter 1956, March quarter 1960, December quarter 1963, and December quarter 1968 into one series. The reference base year, (formerly 1952-53=100) was changed at the March quarter 1969 to 1966-67=100. Index numbers

on the new base are convertible to index numbers on the old base by application of a ratio based on the relationship of the relevant series in 1952-53 and 1966-67.

Origin: The list of component items and the weighting pattern of the 'C' Series Retail Price Index, first adopted in 1921, were slightly revised by the Statisticians' Conference in 1936, but otherwise continued almost unchanged until the index was discontinued in 1960.

The period 1939 to 1948 was marked by war-time controls, price control, and rationing; with the cessation of these controls, there was a rapid rise in prices and a new sequence of changes in consumption and in the pattern of wage-earner expenditure. Thus, in the immediate post-war period, it was virtually impossible to establish a system of weighting that would adequately reflect the changing pattern of household expenditure, or be more continuously representative of current conditions, than that employed in the existing 'C' Series Index. Accordingly, the 'C' Series Index continued to be compiled on its pre-war basis without significant change in procedures.

The Interim Index was a transitional index designed to measure retail price variations on the 'C' Series model in terms of post-war consumption weights, as emerging in the late 1950s. It embraced a wider range of commodities and services than did the 'C' Series Index, but it did not take into account successive major changes in the pattern of expenditure and modes of living that occurred between 1950 and 1960. These changes could not, in fact, be detected and measured promptly, and incorporated into an index concurrently with their happening. In this period, home owning largely replaced house renting, the use of the motor car greatly increased and partly replaced use of public transport, and various items of electrical household equipment and television came into widespread use. The impact of these (and other) changes in usage upon the pattern of household expenditure was heightened by disparate movements in prices. Together they rendered invalid the attempt to meet the situation by devising a single Interim Retail Price Index. As studies progressed and new data became available, it was clear that no single list of items and no single set of fixed weights would be adequately representative as a basis for measuring retail price changes at all times throughout the post-war period. In consequence, the situation was met by compiling the Consumer Price Index, constructed as a chain of linked indexes with significant changes in composition and weighting effected at short intervals (1952, 1956, 1960, 1963, 1968).

Purpose, Scope and Composition: The Consumer Price Index is a quarterly measure of variations in retail prices of goods and services representing a high proportion of the expenditure of wage-earner households. The weighting pattern relates to estimated aggregates of wage-earner household expenditures and not to estimated expenditures of an 'average' or individual household of specified size, type, or of mode of living. In this way it is possible to give appropriate representation to owner-occupied houses, as well as rented houses, and to include motor cars, television sets and other major expenditures which relate to some households and not to others.

Consumer (retail) price indexes are sometimes loosely called 'cost of living indexes' and are thought to measure changes in the 'cost of living'. Neither the Consumer Price Index, nor any other retail price index, measures changes in the cost of living that result directly from changes in the mode or level of living. Changes of that kind are matters for consideration apart from price indexes. However, the change in prices of goods and services is a very important part of the change in the cost of living and this part is measured by consumer (retail) price indexes.

A comprehensive view of the present composition and weighting of the Consumer Price Index is given in the following table. The weights shown are those comprised in the index for the six State capital cities combined. Broadly, they are based on the estimated pattern of consumption for the period 1962-63 to 1966-67 valued at relevant prices of December quarter 1968. The weighting indicates the relative influence given to the various components in measuring the degree of price change in the index from December quarter 1968 (i.e. from the beginning of the current linked series).

Consumer Price Index
Composition and Weighting Pattern at December Quarter 1968 for the Six
State Capital Cities Combined

Group, Section, etc.	Percentage Weight	
	Section, etc.	Group
Food—		
Cereal Products—Bread, flour, biscuits, rice and breakfast foods	4.1	31.3
Dairy Produce—Milk, cheese, butter and eggs	6.0	
Potatoes Onions, Preserved Fruit and Vegetables—Potatoes and onions, canned and dried fruits, and canned and frozen vegetables	2.7	
Soft Drink, Ice Cream and Confectionery	4.3	
Other (except Meat)—Sugar, jam, margarine, tea, coffee, baby foods, and sundry canned and other foods	3.3	
Meat—Butcher's (Beef, mutton, lamb and pork)	8.4	
Processed (Bacon, smallgoods and canned meat) including Poultry	2.5	
Clothing and Drapery—		
Clothing—		14.1
Men's	3.6	
Women's	5.0	
Boys'	0.6	
Girls'	0.8	
Piecegoods, etc.—Wool, cotton, and rayon cloth nursery squares and knitting wool	0.8	
Footwear—Men's, women's and children's	2.5	
Household Drapery—Bedclothes, towels, tablecloths, etc. ..	0.8	
Housing—		
Rent—Privately Owned Houses	2.1	14.2
Government owned houses	0.9	
Privately owned flats	3.1	
Home Ownership—House price	3.4	
Rates	2.7	
Repairs and Maintenance	2.0	
Household Supplies and Equipment—		
Fuel and Light—Electricity	2.4	0.6
Gas	1.0	
Other (Firewood, heating oil, briquettes and kerosene)	0.6	
Household Appliances—Refrigerator, washing machine, stove, radio set, television set, vacuum cleaner, electric iron, etc.	2.6	12.5
Other Household Articles—		
Furniture and Floor Coverings	1.9	
Kitchen and Other Utensils, Gardening and Small Tools ..	0.7	
Household Sundries (Household soaps, etc.)	1.0	
Personal Requisites (Toilet soap, cosmetics, etc.)	1.2	
Proprietary Medicines	0.9	
School Requisites	0.2	

Consumer Price Index
Composition and Weighting Pattern at December Quarter 1968 for the Six
State Capital Cities Combined—continued

Group, Section, etc.	Percentage Weight	
	Section, etc.	Group
Miscellaneous—		
Transport—Fares—Train	1.0	} 27.9
Tram and Bus	1.5	
Private Motoring—Car purchase	3.4	
Car operation	5.8	
Tobacco and Cigarettes	3.6	
Beer	3.7	
Services—Health (Dentist, doctor, hospital)	3.3	
Hairdressing (Haircut, wave, etc.)	0.7	
Drycleaning	0.5	
Shoe repairs	0.2	
Postal and telephone services	1.1	
Other—Radio and television operation	1.1	
Cinema admission	0.8	
Newspapers and weekly magazines	1.2	
Total	100.0	100.0

Six Capital Cities Index: The Six Capital Cities Consumer Price Index is derived as the weighted average of the indexes for the individual cities, the basis of weighting being their populations as recorded at the latest Census.

Comparison of the Six Linked Series: The Consumer Price Index is a chain of 'fixed weight aggregative' indexes, with significant changes in composition and weighting effected at the linking dates; the principal changes were:

- (i) June quarter 1952—introduction of private motoring; changed proportions for modes of house occupancy; change in weights of fuel and fares.
- (ii) June quarter 1956—changed proportions in modes of house occupancy; changed weights for fuel, fares and private motoring.
- (iii) March quarter 1960—introduction of television.
- (iv) December quarter 1963—changed weights for fuel, light, fares and motoring; revised housing weights.
- (v) December quarter 1968—changed weights for all items; introduction of poultry, rented privately-owned flats, heating oil, briquettes and health services (by dentists, doctors, hospitals and health insurance funds).

The consumption pattern of the index for the various periods was based broadly as follows: June quarter 1949 to June quarter 1952, on 1948-49 weights; June quarter 1952 to June quarter 1956, on 1952-53 weights; June quarter 1956 to December quarter 1963, on 1956-57 weights; December quarter 1963 to December quarter 1968, on 1961-62 weights; period from December quarter 1968 on 1962-63 to 1966-67 weights.

The next table has been compiled to show the percentage contribution to the total index of each of the major groups, first at the beginning of each series, and then at the quarter in which the linking transition was made. The

data are for the six capital cities weighted average, and are not completely identical with those employed in calculating the Hobart index; nevertheless the table illustrates the linking mechanism in broad outline:

Consumer Price Index—Analysis of Weighting in Six Linked Series

Linked Series	Percentage Contribution to Total Index (Weighted Average, Six Capital Cities)					
	Food Group	Clothing and Drapery Group	Housing Group	Household Supplies and Equipment Group	Miscellaneous Group	Total
First—						
June Qtr 1949 ..	31.3	22.8	11.4	13.1	21.4	100.0
June Qtr 1952 (a)	35.7	23.0	9.2	12.2	19.9	100.0
Second—						
June Qtr 1952 (b)	33.6	21.6	9.4	11.7	23.7	100.0
June Qtr 1956 (a)	34.3	20.0	10.5	10.9	24.3	100.0
Third—						
June Qtr 1956 (b)	33.7	19.7	10.5	11.6	24.5	100.0
March Qtr 1960 (a)	33.0	19.5	11.0	11.5	25.0	100.0
Fourth—						
March Qtr 1960 (b)	32.1	19.0	10.7	13.2	25.0	100.0
Dec. Qtr 1963 (a)	31.6	18.8	12.0	12.6	25.0	100.0
Fifth—						
Dec. Qtr 1963 (b)	32.1	16.9	12.6	14.5	23.9	100.0
Dec. Qtr 1968 (a)	32.8	15.8	13.2	13.1	25.1	100.0
Sixth—						
Dec. Qtr 1968 (b)	31.3	14.1	14.2	12.5	27.9	100.0

(a) Change in proportions due to disparate price movements during short period shown.

(b) Change in proportions due to deliberate changes in composition or weighting.

The sets of weights used for the successive periods covered by the index have been derived from analyses of statistics of production and consumption, the Population Censuses of 1947, 1954, 1961 and 1966, the Censuses of Retail Establishments of 1948-49, 1952-53, 1956-57 and 1961-62 and the continuing Survey of Retail Establishments, from information supplied by manufacturing, commercial and other relevant sources, and from special purpose surveys.

Consumer Price Index, Hobart

The Consumer Price Index for Hobart is compiled to the base 1966-67=100.0, the number 100 being the base value for each of the five major groups (Food, Clothing and Drapery, Housing, etc.) and also for the 'All Groups' index.

The quarterly prices for food items used in the index are the averages of prices normally collected as at the middle of each of the three months of the quarter. For potatoes and for onions from December quarter 1968, weekly prices are averaged to arrive at monthly prices. Prices for all non-food items are collected at regular quarterly intervals (or at annual intervals with items such as local government rates and seasonal clothing) normally as at the middle of the month. However, for furniture, major household appliances and motoring items (other than motor cars) the collection is made during the first month of each quarter.

The following table has been compiled to show group index movements for Hobart on a quarterly basis:

Consumer Price Index—Quarterly Group Index Numbers, Hobart (a)
(Base of Each Index: Year 1966-67 = 100.0)

Quarter	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellan- eous	All Groups
1965-66—Sept. ..	98.5	97.4	96.4	98.5	93.9	97.0
Dec. ..	99.7	97.7	97.2	98.2	97.6	98.3
March ..	97.9	98.0	97.2	98.3	97.5	97.8
June ..	99.4	98.9	97.7	99.4	97.7	98.7
1966-67—Sept. ..	98.5	98.9	98.1	99.6	98.3	98.6
Dec. ..	98.8	99.9	99.8	99.7	99.0	99.2
March ..	100.7	100.1	100.6	99.9	101.2	100.6
June ..	102.1	101.2	101.5	100.8	101.5	101.5
1967-68—Sept. ..	108.6	101.5	101.7	101.2	103.2	104.3
Dec. ..	107.5	102.3	103.7	103.4	104.7	105.0
March ..	105.9	102.5	104.1	103.3	104.8	104.6
June ..	105.1	103.1	104.7	103.7	105.3	104.6
1968-69—Sept. ..	105.1	103.5	105.5	104.1	106.3	105.0
Dec. ..	105.3	104.5	108.4	104.1	107.3	105.8
March ..	105.1	104.7	109.4	104.7	109.0	106.5
June ..	105.8	105.3	110.1	105.2	109.4	107.0
1969-70—Sept. ..	105.6	106.2	110.6	105.5	110.0	107.4
Dec. ..	106.0	107.6	112.3	105.8	110.4	108.1
March ..	106.9	108.2	113.2	106.3	111.2	108.9
June ..	106.9	109.4	114.1	106.9	112.5	109.6

(a) Figures after decimal point have limited significance. They are inserted to avoid the distortions that would occur in rounding.

The following table shows the 'All Group' index numbers for Hobart quarter by quarter, and also as averages for financial years:

Consumer Price Index—All Groups Index Numbers, Hobart (a)
(Base of Index: Year 1966-67 = 100.0)

Year	Quarter Ending—				Average for Year
	September	December	March	June	
1959-60	84.8	85.1	85.6	86.8	85.6
1960-61	89.1	90.0	90.9	91.3	90.3
1961-62	91.4	90.9	90.3	90.3	90.7
1962-63	90.4	90.8	90.7	90.8	90.7
1963-64	91.2	91.4	91.9	92.2	91.7
1964-65	93.3	94.5	94.9	95.8	94.6
1965-66	97.0	98.3	97.8	98.7	98.0
1966-67	98.6	99.2	100.6	101.5	100.0
1967-68	104.3	105.0	104.6	104.6	104.6
1968-69	105.0	105.8	106.5	107.0	106.1
1969-70	107.4	108.1	108.9	109.6	108.5

(a) Figures after decimal point have limited significance. They are inserted to avoid the distortions that would occur in rounding.

The next table shows, as averages for financial years, the group indexes for Hobart.

Consumer Price Index—Annual Group Index Numbers, Hobart (a)
(Base of Each Index: Year 1966-67 = 100.0)

Year	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	All Groups
1959-60	82.8	92.0	77.6	92.9	85.0	85.6
1960-61	92.4	93.5	81.9	94.9	87.0	90.3
1961-62	90.2	94.7	85.6	97.5	87.5	90.7
1962-63	88.9	95.2	88.2	97.1	87.6	90.7
1963-64	90.1	95.7	90.9	97.1	88.4	91.7
1964-65	94.0	97.0	94.5	97.6	92.0	94.6
1965-66	98.8	98.0	97.1	98.6	96.7	98.0
1966-67	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	106.8	102.4	103.6	102.9	104.5	104.6
1968-69	105.3	104.5	108.4	104.5	108.0	106.1
1969-70	106.4	107.9	112.6	106.1	111.0	108.5

(a) Figures after decimal point have limited significance. They are inserted to avoid the distortions that would occur in rounding.

Average Prices of Foodstuffs, Hobart

The next table has been compiled to show the average retail price of selected foodstuffs in Hobart since 1950. The list, while representative of foodstuffs commonly consumed, is not exhaustive; for a description of foodstuffs in the Consumer Price Index regimen, see the earlier table 'Consumer Price Index, Composition and Weighting Pattern'.

Average Retail Prices (a): Hobart
Selected Items of Foodstuffs
(Cents)

Article	Unit (a)	1950	1955	1960	1965	1968	1969
Bread (delivered) ..	2 lb	6.6	12.0	14.2	15.8	19.1	20.1
Flour (plain)	"	4.7	9.5	11.8	13.7	16.3	16.8
Tea	$\frac{1}{2}$ lb	15.2	36.6	34.2	32.9	33.0	31.9
Sugar (b)	1 lb	4.2	7.5	9.3	9.5	11.1	11.2
Jam (plum)	$1\frac{1}{2}$ lb	12.0	23.5	28.7	27.3	28.4	29.4
Potatoes	7 lb	17.7	41.2	34.5	69.2	48.5	42.4
Butter (factory) ..	1 lb	22.0	43.4	46.9	49.6	52.0	54.2
Eggs (c)	doz	33.5	55.8	56.7	61.0	62.2	68.3
Bacon (rashers) (d) ..	1 lb	32.6	57.4	68.3	89.2	102.3	99.2
Milk, bottled, delivered	qt	9.5	16.5	17.3	17.8	20.0	20.0
Beef—							
Rump Steak	1 lb	22.8	47.4	65.9	79.4	90.5	90.9
Corned Silverside ..	"	16.9	34.0	44.2	51.6	63.0	61.6
Mutton—							
Leg	"	11.8	23.8	24.9	29.8	28.2	27.9
Loin Chops	"	11.5	18.9	19.0	25.2	25.8	24.7
Pork, Leg	"	26.9	41.8	53.9	61.8	67.8	66.9

(a) The table units are not necessarily those for which the original price data were obtained (see notes (b) and (d)). In such cases, prices have been calculated for the table unit.

(b) Prices obtained for one pound prior to 1966; for four pound packets from 1966.

(c) 'Large' prior to 1964; 'two ounce' eggs from 1964.

(d) Prices obtained for one pound prior to 1966; for half a pound from 1966.

Wholesale Price Indexes

General

The following wholesale price indexes of basic materials have been compiled by the Bureau:

1. Melbourne Wholesale Price Index (now obsolete).
2. Wholesale Price (Basic Materials and Foodstuffs) Index. (This superseded the Melbourne Wholesale Price Index and has been compiled since 1928 but is now unrepresentative of current conditions.)
3. Wholesale Price Index of Materials used in Building other than House Building. (Has largely superseded the Building Materials group of the preceding index.)
4. In 1970, surveys of materials used in house building were completed to determine the weighting pattern for the new wholesale price index of materials used in house building. The new index was released late in 1970.

A further index, relating to materials used in manufacturing, is under consideration. This index, together with the two building indexes, will constitute a representative replacement for the Wholesale Prices (Basic Materials and Foodstuffs) Index.

Melbourne Wholesale Price Index

The first wholesale price index compiled by the Bureau was the Melbourne Wholesale Price Index, originally computed in 1912, with weights for basic materials and food appropriate to usage in 1910.

The Melbourne Wholesale Price Index—now obsolete—was continued up to the year 1961 and is of historic interest since the series was taken back in time to 1861, but still using the weights appropriate to 1910. Details of this index, from 1861 to 1961, were published in the Bureau's *Labour Report*, No. 49 (1961).

Wholesale Price (Basic Materials and Foodstuffs) Index

This index—the Wholesale Price (Basic Materials and Foodstuffs) Index—extends back to the year 1928 and is compiled monthly. While retail price indexes have been compiled for individual capitals and towns, this wholesale price index is derived almost exclusively from Melbourne sources. Nevertheless, the series is of value as indicative of the trend of wholesale prices in Australian markets generally. The commodities in the current index are priced in their primary or basic form wherever possible. The prices used have in the main, been obtained directly from manufacturers and merchants. The weighting system adopted is based on estimates of the average annual consumption of included commodities in Australia from 1928-29 to 1934-35. The validity of the weighting and the representativeness of the index have become increasingly affected by changes in usage and in industrial structure.

New series of wholesale price index numbers relating to materials used and articles produced by defined areas of the economy are being developed. The first of these indexes, the Wholesale Price Index of Materials used in Building other than House Building, became available during April 1969 (see next section). Work continues on the preparation of two further measures relating to materials used in house building and in manufacturing industry respectively. Taken together, these first three series will, to a considerable extent, constitute a currently representative replacement for the Wholesale

Price (Basic Materials and Foodstuffs) Index, which in the meantime will continue to be published in the form shown in the next table. This is to meet the needs of those who, for special purposes, require the particular indexes included.

The following table gives the index numbers and shows details for each commodity group. The data have been compiled as averages for financial years but the series is also maintained on a monthly basis.

Wholesale Price (Basic Materials and Foodstuffs) Index Numbers
(Base of Each Index: Average of Three Years Ended June 1939=100)

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Basic Materials—							
Metals and Coal ..	383	391	390	396	397	407	439
Oils, Fats and Waxes ..	207	207	218	220	225		
Textiles ..	484	427	432	419	392	} <i>n.a.</i>	} <i>n.a.</i>
Chemicals ..	286	286	325	381	397		
Rubber and Hides ..	221	242	306	281	222		
Building Materials ..	473	503	507	511	514	537	551
Total (a) ..	339	345	355	362	361	370	380
Foodstuffs and Tobacco	352	364	385	401	411	405	405
Total All Groups (a)	346	355	371	383	388	389	394

(a) Weighted average.

Wholesale Price Index of Materials Used in Building Other Than House Building

General: This is a new price index related to the construction of buildings. It is the first of two such measures, the second of which will be a companion index referring to prices of materials used in house building. This index is the first of a series of indexes which will be prepared as circumstances permit and which will relate to materials used and articles produced by other important and defined areas (or 'sectors') of the economy. To a considerable extent it provides an up-to-date replacement for the Building Materials group of the Wholesale Price (Basic Materials and Foodstuffs) Index.

Scope and Composition: The index measures changes in prices of selected materials used in the construction of buildings other than houses and 'low-rise' flats (in general, those up to three storeys).

Its composition is in accordance with the materials used in actual building projects which were selected as representative for the purpose.

The completed values of these types of selected buildings constituted approximately 86 per cent of the completed values of all new buildings other than houses and low-rise flats in the years 1964-65 to 1966-67 inclusive. Not directly represented are buildings for entertainment and recreation purposes, buildings for religious purposes, and the Building Statistics category 'Miscellaneous' buildings.

The index includes 72 items, combined in eleven groups, in addition to an 'All Groups' index. Some items carry the weights of similar items not directly priced. Items are described in terms of fixed specifications with the aim of recording price changes for representative materials of constant quality. The groups and respective percentage weights of the index are shown in the next table.

Base Period: The reference base of the index is the year 1966-67=100.0. The index is a fixed-weights index and is calculated by the method known as 'the weighted arithmetic mean of price relatives'.

**Wholesale Price Index of Materials Used in Building Other Than House Building
Composition and Weighting Pattern**

Group	Percentage Weight of Group
Concrete Mix, Cement, Sand, etc... ..	10.41
Cement Products	3.64
Bricks, Stone, etc.	5.28
Timber, Board and Joinery	11.90
Steel and Iron Products	30.58
Aluminium Products	6.01
Other Metal Products	2.59
Plumbing Fixtures	1.19
Miscellaneous Materials	7.09
Electrical Installation Materials	8.61
Mechanical Services Components	12.70
Total	100.00

Items and Weights: The items and weights used in the index were derived from reported values of each material used in selected representative buildings constructed in or about 1966-67. The selection took account of building use-type and construction characteristics (e.g. type of frame, wall, floor, etc.) within use-types. A single weighting pattern, relating to the whole of Australia, is applied (with minor exceptions) to local price measures in calculating indexes for each State metropolitan area. The index for the six State metropolitan areas combined is a weighted average of individual city indexes. The relative weighting of the metropolitan areas is in proportion to the estimated value on completion of building other than house building commenced in the separate States during the three years ended June 1967.

Prices: Price series used relate to specified standards of each commodity and are obtained in all State metropolitan areas from representative suppliers of materials used in building. In the main they are collected as at the mid-point of the month to which the index refers, or as near thereto as practicable. The indicator used for the group 'Electrical Installation Materials' was, until February 1969, a separate quarterly wholesale price index, prices for which were obtained each February, May, August and November. For intervening months the last observed level was used. The index has been compiled on a monthly basis from February 1969.

There are some exceptions to the use of local prices in the indexes for each metropolitan area. In a few cases where suitable price series are not currently available for an item in a given city, imputation is necessary. For each metropolitan area, the whole of the group 'Electrical Installation Materials' and the majority of the items in the group 'Mechanical Services Components' are based on Sydney and Melbourne price series.

Index Numbers: The index has been compiled for each month from July 1966, and for the financial years from 1966-67.

The separate city indexes measure price movements within each metropolitan area individually. They enable comparisons to be drawn between metropolitan areas as to differences in degree of price movement from period to period, but not as to differences in price level.

The following table compares movements in the index numbers for each of the six Capital Cities and the six Capitals combined since the beginning of 1966-67:

Wholesale Price Index of Materials Used in Building Other Than House Building
All Groups Index Numbers—Six State Capital Cities (a)
(Base of Each Index: Year 1966-67=100.0)

Period	State Capital Cities						Weighted Average of Six State Capital Cities
	Sydney	Mel- bourne	Brisbane	Adelaide	Perth	Hobart	
1966-67 ..	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68 ..	102.6	101.7	102.2	101.8	102.0	102.3	102.2
1968-69 ..	106.5	105.0	105.1	105.0	104.7	105.1	105.6
1969-70 ..	111.7	109.8	110.3	109.4	108.9	109.7	110.5
1969-70—							
July ..	109.4	107.3	108.0	107.4	106.8	107.4	108.2
August ..	109.7	108.2	108.0	107.6	107.2	107.7	108.6
September ..	110.1	108.7	108.4	108.3	107.9	108.0	109.1
October ..	110.2	108.8	108.9	108.4	107.8	108.5	109.2
November ..	110.3	108.9	109.1	108.4	107.8	108.5	109.3
December ..	110.7	109.2	109.5	108.7	108.1	108.7	109.7
January ..	111.6	109.8	110.5	109.1	108.7	109.6	110.4
February ..	112.7	110.9	111.5	110.1	109.3	110.8	111.5
March ..	113.3	111.2	111.9	110.9	110.3	111.1	112.0
April ..	114.1	111.5	112.6	111.5	110.7	112.0	112.6
May ..	114.3	111.4	112.8	111.4	110.9	112.1	112.7
June ..	114.1	111.3	112.7	111.3	110.8	112.4	112.6

(a) Figures are shown to one decimal place to avoid distortions that would occur in rounding off the index numbers to the nearest whole number.

Index numbers for the Hobart metropolitan area for each group of items are given in the following table:

Wholesale Price Index of Materials Used in Building Other Than House Building
Group Index Numbers, Hobart (a)
(Base of Each Index: Year 1966-67=100.0)

Period	Concrete Mix, Cement, Sand, etc.	Cement Products	Bricks, Stone, etc.	Timber, Board and Joinery	Steel and Iron Products	Aluminium Products
1966-67 ..	100.0	100.0	100.0	100.0	100.0	100.0
1967-68 ..	104.8	100.4	103.1	101.7	102.5	100.8
1968-69 ..	108.0	103.8	108.5	103.8	105.5	99.6
1969-70 ..	109.1	107.1	111.3	108.9	109.8	100.9
1967-68—						
September ..	104.1	100.1	101.4	101.3	101.3	100.7
December ..	104.2	100.1	101.9	101.7	101.4	100.9
March ..	104.2	100.1	104.5	102.3	103.9	100.9
June ..	107.0	101.9	108.2	102.4	104.2	101.1
1968-69—						
September ..	107.0	103.7	108.4	102.5	104.2	99.5
December ..	107.6	103.7	108.6	104.2	104.9	99.5
March ..	108.8	103.7	108.6	104.7	107.0	99.5
June ..	108.8	106.4	108.7	105.7	107.1	100.3
1969-70—						
September ..	108.8	106.6	109.5	108.1	107.6	100.4
December ..	109.0	106.6	109.8	108.1	107.9	100.8
March ..	109.0	107.6	109.6	108.7	112.2	101.2
June ..	111.2	107.6	116.3	112.1	112.9	101.1

Wholesale Price Index of Materials Used in Building Other Than House Building
Group Index Numbers, Hobart (a)—continued

Period	Other Metal Products	Plumbing Fixtures	Miscel- laneous Materials	Electrical Installation Materials (b)	Mechanical Services Compon- ents (b)	All Groups
1966-67	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	105.9	103.2	101.7	100.9	101.4	102.3
1968-69	103.1	105.5	103.0	102.1	107.7	105.1
1969-70	122.3	114.0	107.5	112.2	111.8	109.7
1967-68—						
September ..	96.6	103.7	101.3	97.6	99.9	100.9
December ..	110.9	103.7	101.8	102.2	100.4	101.9
March ..	116.3	103.7	101.8	104.0	102.7	103.5
June ..	101.1	103.7	102.4	100.9	104.8	103.8
1968-69—						
September ..	101.0	103.7	103.0	99.0	106.0	103.8
December ..	101.1	104.6	103.0	100.2	108.1	104.7
March ..	102.1	108.3	103.2	104.6	108.7	106.1
June ..	112.3	108.3	103.2	107.2	109.3	106.9
1969-70—						
September ..	117.3	111.5	103.9	111.3	109.3	108.0
December ..	124.0	114.4	107.5	112.7	109.4	108.7
March ..	124.0	115.3	109.4	113.4	115.1	111.1
June ..	125.0	116.4	109.7	113.6	115.3	112.4

(a) Figures are shown to one decimal place to avoid distortions that would occur in rounding off the index numbers to the nearest whole number.

(b) The whole of the group 'Electrical Installation Materials' and the majority of items in the group 'Mechanical Services Components' are based on Melbourne and Sydney price series.

Australian Export Price Index

This index has fixed-weights, its purpose being to provide comparisons monthly over a limited number of years, of the level of export prices of the selected items, making no allowance for variations in quantities exported. The index numbers are thus measures of price change only. The price series used in the index relate to specific standards for each commodity and in most cases are combinations of prices for a number of representative grades, types, etc. For some commodities, price movement in the predominant market, or markets, are used, while for other commodities average realisations in all export markets are used. As nearly as possible, prices used are on the basis f.o.b. at the main Australian ports of export.

Export Price Index Numbers: Australia (Base of Each Index: Year 1959-60=100)

Period	Wool	Meats	Dairy Pro- duce	Cereals	Dried and Canned Fruits	Sugar	Hides and Tallow	Metals and Coal	Gold	All Groups
1959-60	100	100	100	100	100	100	100	100	100	100
1967-68	95	125	79	109	95	67	67	120	104	100
1968-69	99	131	72	104	97	72	73	123	117	102
1969-70	87	p148	73	96	p99	p94	93	145	108	p100
1969-70										
Sept.	92	156	72	98	p99	89	95	138	118	p103
Dec.	87	139	73	98	p98	77	93	147	103	p99
Mar.	83	p151	73	93	p98	p93	94	150	102	p99
June	79	p153	75	92	p97	p96	93	149	102	p97

WAGES**Basic Wage in Tasmania***General*

The concept of a 'basic' or 'living' wage was common to rates of wages determined by industrial authorities in Australia before an award of the Commonwealth Conciliation and Arbitration Commission in June 1967 introduced a new industrial concept, *the total wage*. Initially the pre-1967 concept was interpreted as the 'minimum' or 'basic wage' necessary to maintain an average employee and his family in a reasonable state of comfort. However, it was later generally accepted '... that the wage should be fixed at the highest amount which the economy can sustain and that the dominant factor is the capacity of the community to carry the resultant wage levels' (*Commonwealth Arbitration Report*, Vol. 77).

In Tasmania, some workers are members of industrial organisations (trade unions) which have interstate affiliations and which fall within the jurisdiction of the Commonwealth Conciliation and Arbitration Commission; other workers are members of trade unions which are without interstate affiliations and which fall within the jurisdiction of State Wages Boards. Thus, at any point in time, it was possible to have two basic wages operative in Tasmania, one fixed by a Commonwealth authority and the other fixed by a State authority. This, however, is a simplification—in theory, at least, each State Wages Board was at liberty to determine an individual basic wage for the trade covered by its jurisdiction. It follows, again in theory, that there could have been seventy different basic wages in operation since there were approximately seventy active Wages Boards. In actual fact, machinery exists to avoid such a situation arising and the operation of this machinery is described in a subsequent section headed 'State Wages Boards'. The pre-1967 situation may be summarised as follows: the basic wage fixed by the Commonwealth Conciliation and Arbitration Commission in the Federal Metal Trades Award had eventual application not only to most Tasmanian workers under Federal awards but also to most workers under the jurisdiction of State Wages Boards.

Retention of the Basic Wage

In 1967, the Commonwealth Conciliation and Arbitration Commission abolished the basic wage and decided to give all awards in terms of *total wages*; this precedent was not followed by all State wage-fixing authorities and Tasmanian Wages Boards have retained the basic wage (and the associated concept of margins). Three other States (N.S.W., Qld, and W.A.) have also retained the basic wage. With minor exceptions, the position since 1967 has been as follows: in the annual National Wage Cases, the Commonwealth Commission has handed down awards based on the *total wage* concept and the State wage-fixing authorities have followed the Commonwealth lead, but the quantum of increase has had to be expressed on the old basis, i.e. in terms of basic wage and margins.

Commonwealth Basic Wage

Under the *Commonwealth Conciliation and Arbitration Act 1904-1964*, the Commonwealth Conciliation and Arbitration Commission could, for the purpose of preventing or settling an industrial dispute extending beyond the limits of any State, make an order or award 'altering the basic wage (that is to say, that wage or part of the wage, which is just and reasonable for an adult male (female) without regard to any circumstances pertaining to the work upon which, or the industry in which he (she) is employed) or the principles upon which it is computed'. From this quotation, it may be deduced that margins

and other 'secondary' components over and above the basic wage were fixed by consideration of 'circumstances pertaining to the work upon which, or the industry in which the worker is employed'.

Summary of Commonwealth Judgments

Pre-1953 A detailed summary of decisions of the Commonwealth Court of Conciliation and Arbitration in the period 1907-1953 appears in the 1968 *Year Book*. The first definition and determination of the basic wage was made by Mr Justice Higgins in 1907.

1953 In September, the Court ruled automatic quarterly adjustments of the basic wage should cease.

1956 In May, the Court rejected the principle of automatic quarterly adjustments but increased the male basic wage by \$1.

1957 In April, the Commission again rejected the principle of automatic quarterly adjustment and again increased the male basic wage \$1. It supported the principle of annual reviews.

1958 In May, an increase of 50 cents was made but automatic quarterly adjustments were again refused.

1959 In June, the Commission, by majority decision, decided on an increase of \$1.50; also, by majority decision, it rejected the principle of automatic quarterly adjustments.

1960 In April, the Commission decided to grant no increase.

1961 In July, the Commission increased the basic wage by \$1.20, rejecting both employers' claims for a 42 hour week and unions' claims for automatic quarterly adjustment. It also ruled that, in February 1962, 'the only issue in regard to the basic wage should be why the money wages fixed as a result of our decision should not be adjusted in accordance with any change in the Consumer Price Index'.

1962 At the February hearing (as prescribed in the 1961 judgment), the Commission considered the movement in the Consumer Price Index. The index being virtually stationary in the year under review, the Commission granted no increase.

1963 In February, the Commission again rejected claims for an increase.

1964 In June, the Commission was divided on the amount of the appropriate increase and the award of \$2 was made on the casting vote of the President. It rejected the application of employers for deletion from the Commission's awards, generally, of the basic wage provisions and for the insertion in those awards of a wage expressed as a total wage. The outcome of similar employers' applications made in 1965, 1966 and 1967 is dealt with in a subsequent section headed *Total Wage Concept*.

1965 On 29 June, the Commission refused to increase the basic wage but it varied margins by the $1\frac{1}{2}$ per cent formula, i.e. the total of current *basic wage and margin* was to be increased by $1\frac{1}{2}$ per cent and the resulting increment credited to the margin.

1966 The Commission increased the basic wage \$2 with effect from 11 July.

1967 End of basic wage in Commonwealth awards. (*See subsequent section headed 'Total Wage Concept'.*)

Basic Wage Rates from 1923

The following table has been compiled to show the Commonwealth basic wage rates operating in Australian capital cities before the decision of 5 June 1967.

Commonwealth Basic Wage—Weekly Rates, Adult Males
(£)

Date Operative (a)	Sydney	Mel- bourne	Brisbane	Adelaide	Perth	Hobart	Six Capital Cities
August 1953 ..	24.30	23.50	21.80	23.10	23.60	24.20	23.60
June 1956 ..	25.30	24.50	22.80	24.10	24.60	25.20	24.60
15 May 1957 ..	26.30	25.50	23.80	25.10	25.60	26.20	25.60
21 May 1958 ..	26.80	26.00	24.30	25.60	26.10	26.70	26.10
11 June 1959 ..	28.30	27.50	25.80	27.10	27.60	28.20	27.60
7 July 1961 ..	29.50	28.70	27.00	28.30	28.80	29.40	28.80
19 June 1964 ..	31.50	30.70	29.00	30.30	30.80	31.40	30.80
11 July 1966 ..	33.50	32.70	31.00	32.30	32.80	33.40	32.80

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

The next table shows the basic weekly wage rates prescribed for adult males under periodical decisions of the Commonwealth Court of Conciliation and Arbitration (and later of the Commonwealth Conciliation and Arbitration Commission).

The final year of the table—1967—is noted as ‘abolition of the basic wage’. The Commission awarded wage increases in June 1967 and October 1968 but embodied them in the new concept of a total wage. The rates generally are operative from the first pay-period commencing in the month shown or commencing on or after the date shown, and are those applicable to Hobart.

Commonwealth Basic Wage Rate From 1923—Hobart
Adult Males
(£)

Date Operative	Weekly Rate	Date Operative	Weekly Rate
1923, February	8.15	1952, November ..	23.00
1927, November	8.50	1957, May	(a) 26.20
1932, November	6.43	1961, July	(a) 29.40
1937, October	(a) 7.50	1966, July	(a) 33.40
1942, November	9.20	1967, June	(b)
1947, November	10.70		

(a) Rate declared subsequent to an enquiry.

(b) Abolition of Federal basic wage; see later section headed ‘Total Wage Concept’.

Commonwealth Basic Wage Rates for Females

The following table summarises the Commonwealth basic wage applicable to females from 1939. Prior to 1950, female basic wage rates had been approximately 54 to 56 per cent of male rates but the Court of Conciliation and Arbitration in its judgment in December of that year fixed the relativity at 75 per cent.

**Commonwealth Basic Wage Rate, Hobart—Adult Females
(\$)**

Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate
Sept. 1939 ..	4.20	May 1952 ..	16.05	15 May 1957 ..	19.65
Nov. 1947 ..	5.80	Aug. 1952 ..	16.65	21 May 1958 ..	20.00
Nov. 1948 ..	6.35	Nov. 1952 ..	17.25	11 June 1959 ..	21.15
Nov. 1949 ..	6.90	Feb. 1953 ..	17.40	7 July 1961 ..	22.05
Nov. 1950 ..	7.50	May 1953 ..	17.90	19 June 1964 ..	23.55
Dec. 1950 (b) ..	12.00	Aug. 1953 ..	18.15	11 July 1966 ..	25.05
Nov. 1951 ..	14.90	June 1956 ..	18.90	5 June 1967 ..	(c)

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

(b) Female rate increased to 75 per cent of male rate.

(c) Abolition of Federal basic wage; see later section headed 'Equal Pay Legislation'.

State Basic Wage

It is something of a contradiction to speak of a Tasmanian State basic wage, since no provision exists in industrial legislation for the declaration of a State rate. Prior to February 1956, most Wages Boards adopted Commonwealth basic wage rates. However, from February 1956 to May 1958 there was a divergence between Commonwealth and State rates as shown in the following table:

**Basic Wage, Hobart—Adult Males and Females (Weekly Rates)
Divergence Between Commonwealth and State Awards (1956-1958)
(\$)**

Month of Operation (a)	Commonwealth Awards		State Wages Boards' Awards	
	Males	Females	Males	Females
Aug. 1953	24.20	18.15	24.20	18.15
Feb. 1956	24.20	18.15	25.90	19.42
May 1956	24.20	18.15	26.80	20.10
June 1956	25.20	18.90	26.80	20.10
Aug. 1956	25.20	18.90	27.20	20.40
May 1957	26.20	19.65	27.20	20.40
May 1958	26.70	20.00	27.20	20.40
June 1959	28.20	21.15	28.20	21.15

(a) Operative as from the beginning of the first pay-period in the month shown.

In February, May and August 1956, most State Wages Boards reverted to the system of automatic quarterly adjustments abandoned by the Commonwealth Court in September 1953. In June 1959, most Wages Boards brought their basic wage into line with that awarded by the Commonwealth Commission and have followed its judgments since that date.

The next table shows State basic wages in those States which have retained the basic wage concept:

State Basic Wages—Weekly Rates
(**\$**)

State or Locality	Date of Operation (a)	June 1969	
		Males	Females
New South Wales (Sydney) ..	19 December 1969	36.90	28.30
Queensland (Brisbane) ..	22 December 1969	36.65	28.05
Western Australia (Perth) ..	24 November 1969	36.45	27.88
Tasmania (Hobart) ..	19 December 1969	36.80	28.20

(a) Rates are operative from the beginning of the first pay-period commencing after the date shown, or during the month shown.

The following describes how each State dealt with the abolition of the basic wage in Commonwealth awards.

N.S.W.: Adult male and female award rates were increased by \$1 per week, called 'July economic loading' and operative from 1 July 1967 to 1 January 1968, when the loading was absorbed in the basic wage; the male and female basic wages were then \$34.50 and \$26.10 respectively. From 19 December 1969 the State basic wage for males and females was increased by \$1.05 and \$0.85 to \$36.90 and \$28.30 respectively. In addition to the basic wage increase, margins in awards were increased by three per cent.

Victoria: The State basic wage in Melbourne was last varied to operate from July 1966 (\$32.70 male and \$24.50 female). Basic wages and margins were deleted from determinations as from 25 October 1968 and wage rates were expressed as total wages. From 19 December 1969 total award wages were increased by three per cent.

Queensland: As from 28 October 1968 the basic wage for males and females was increased by \$1.35 per week to \$35.55 and \$27.25 respectively. Commencing on 22 December 1969 the basic wage for males and females was \$36.65 and \$28.05 respectively, an increase of \$1.10 and \$0.85 on the 1968 levels; margins in awards were increased by three per cent.

S.A.: The 'living wages' for adult males and adult females were increased by \$1 per week from 3 July 1967 and by \$1.35 per week from 28 October 1968 to \$34.65 and \$26.55 respectively. On 22 December 1969 an economic loading of three per cent of the sum of the living wage plus margin was added to all award rates of pay.

W.A.: A special loading of \$0.60 per week was added to award rates for adult males and females operative from 1 July 1967; the loading was increased to \$1.95 operative from 25 October to 22 November when the loading was absorbed into the basic wage. A decision on 24 November 1969 increased the male and female basic wages by \$1 and \$0.80 respectively to \$36.45 and \$27.88. Three per cent was also added to margins from 24 November 1969.

Tasmania: The Chairman of State Wages Boards announced on 4 July 1967 that a male and female adult basic wage increase of \$1 would be incorporated in Wages Boards' determinations. The basic wage for adult males and females was increased by \$1.35 per week, operative from 25 October 1968, to \$35.75 and \$27.40 respectively. From 19 December 1969 the male and female basic wages were increased by \$1.05 and \$0.80 respectively to \$36.80 and \$28.20. Also margins in awards were increased by three per cent.

Minimum Wages

The Commonwealth Conciliation and Arbitration Commission announced in its decision of 8 July 1966 that it intended to grant relief to low wage earners by inserting a provision prescribing a minimum wage. It ordered that the minimum male wage paid under the Metal Trades Award should be the appropriate basic wage plus \$3.75 a week (e.g. in Tasmania a basic wage of \$33.40 plus \$3.75 giving a minimum wage of \$37.15).

Tasmanian Wages Boards introduced the concept of the minimum wage into its determinations in June 1967. Weekly minimum wage rates prescribed in Commonwealth and State awards are shown in the following table:

Minimum Wages, Adult Males: Commonwealth Commission and Tasmanian State Wages Boards
(£)

Date Operative	Commonwealth Awards	Tasmanian State Wages Boards Determinations
11 July 1966	37.15	..
1 July 1967	38.15	38.15
25 October 1968	39.50	40.45
19 December 1969	43.00	43.00

Wage Margins in Tasmania

General

Wage margins have been defined as 'minimum amounts awarded above the basic wage to particular classifications of employees for the features attaching to their work which justify payments above the basic wage, whether these features are the skill or experience required for the performance of that work, its particularly laborious nature, or the disabilities attached to its performance' (*Commonwealth Arbitration Report*, Vol. 80).

Marginal rates of wages were determined both by Commonwealth and State industrial tribunals (in Tasmania, by State Wages Boards) before an award of the Commonwealth Conciliation and Arbitration Commission in June 1967 introduced a new industrial concept, *the total wage*, in Commonwealth awards. In the Commonwealth jurisdiction, prior to 1954, the Commonwealth Court of Conciliation and Arbitration had not made any general determination in respect of wage margins, but general principles of marginal rate fixation had been enunciated by the Court in the Engineers' Case of 1924, the Merchant Service Guild Case of 1942 and the Printing Trades Case of 1947. Major determinations affecting margins were made in the Commonwealth jurisdiction in 1954, 1959, 1963 and 1965 (the 1965 hearing resulted in a determination affecting margins generally even though conceived originally by the claimant trade unions as concerned purely with basic wage issues). The decisions of the Commonwealth Court (and later of the Commonwealth Conciliation and Arbitration Commission) have generally been followed by State industrial tribunals in the determination of margins in State awards. The Tasmanian State Wages Boards have undoubtedly been influenced in their margins determinations by those made in the Commonwealth jurisdiction, although an independent policy has sometimes been pursued (e.g. special 15 per cent marginal increases for certain tradesmen in the State sphere in 1963, as opposed to 10 per cent increases granted in the Commonwealth jurisdiction).

Summary of Major Judgments (Commonwealth)

1954 In November, the Commonwealth Court made an order re-assessing the margin structure in the Metal Trades Award by, in general, raising the current amount of the margin to $2\frac{1}{2}$ times the amount of the margin that had been current in 1937. However, in cases in which the result of the calculation produced an amount less than the existing margin, the existing margin was to remain unaltered. In effect, this decision increased the margin of a fitter from \$5.20 weekly to \$7.50, increased similarly margins of other skilled occupations, and made no increase in margins of what may generally be described as the unskilled or only slightly skilled occupations under the Metal Trades Award.

1959 In November, the Commission made an order re-assessing the marginal structure in the Metal Trades Award, Part I, by increasing the existing margins by 28 per cent, the amount of the increase being taken to the nearest 5 cents. The effect of this decision was to increase the margin of the fitter from \$7.50 to \$9.60 per week.

The Commission emphasised that the decision related only to the Metal Trades Award but acknowledged that on occasions in the past, margins fixed in the Metal Trades Award, and in particular the margin of the fitter, had been used as standards for other awards. The use of the 28 per cent formula as a guide in other disputes would be a matter for the parties as far as conciliation was concerned and, if arbitration was necessary, for the Commission itself.

The 28 per cent formula, despite the fact that it had not been designed for general application, was in fact subsequently embodied in most Commonwealth tradesmen's awards and also had wide application in determinations of State Wages Boards in Tasmania.

1963 In April, the Commission made an order increasing margins for adult males in the Metal Trades Award by ten per cent, operative from the first pay-period commencing on and after 22 April. The Commission emphasised that the decision would relate to the Metal Trades Award only, although it was realised that the margin of the fitter had been used as a standard for other awards. In the present case, the Commission stated it was not intended that the decision should be applied automatically outside the metal trades. The use of any changes in margins granted by the Commission, as a guide in other disputes, would be a matter for the parties as far as conciliation was concerned and, if arbitration was necessary, for the Commission. In Tasmania, the 10 per cent formula had fairly general application in most Federal awards; however, for workers under the jurisdiction of State Wages Boards, the Commonwealth formula was varied, the more highly skilled receiving a 15 per cent increase in margins.

1965 The Commission, on 29 June, delivered judgment, refusing a basic wage increase but ordering a margin increase based on the $1\frac{1}{2}$ per cent formula (i.e. total wage to be increased by $1\frac{1}{2}$ per cent and the increment to be credited to the marginal component).

1966 In July, the Commission deferred a decision on margins but ordered a Commissioner to investigate the Metal Trades' marginal structure from the work-value aspect. In December, it delivered judgment on an *interim* margins claim, using incremental formulae based on 1.0, 1.5, 2.0 and 2.5 per cent of total wage.

1967 End of margins *as such* in Commonwealth awards. (See later section headed 'Total Wage Concept').

Metal Trades Work Value Award

Decision of December 1967

The margins cases of 1954, 1959 and 1963, although argued originally for Metal Trades employees, had nevertheless been used as a precedent for higher rates for most workers. In 1966, the Commission dealt with a Metal Trades margins case, which was, as usual, argued principally on general economic grounds. In July, its decision was to grant no immediate marginal increases, but to start an investigation of Metal Trades margins from the *work value* aspect. This involved comparing the rates for each classification within the award, one with another, and also with rates outside the award; its aim was to put a value on the type of work performed by Metal Trades workers in individual classifications. Later in the same year (December), the Commission gave an interim decision stipulating percentage increases in the total wage.

The work value decision was handed down on 11 December 1967 following lengthy investigations. It awarded substantial increases to some classifications specified in the Metal Trades award (e.g. fitter's rate advanced by \$7.40); it gave no specific direction on over-award payments but suggested that they might be absorbed to some extent in the new award rates. Unlike Metal Trades awards resulting from *economic cases*, this award did not create a precedent capable of general application, and tradesmen in other fields were warned that they would need to argue *work value cases* for the individual classifications in their particular industries.

Over-award Payments

Before the award of December 1967, many Metal Trades employers were paying rates higher than the minima fixed by the Commission. After the award, their problem was whether to increase existing payments by the exact increment determined by the Commission, or whether to reduce over-award payments (known as 'absorption'). The industrial disputes that followed were concerned not so much with the new minimum wages but rather with maximum wages (and on these the Commission had given no ruling). Three months after the award, the employers appealed to the Full Bench of the Commission and put forward the following alternatives: (i) cancellation of the new rates; (ii) a ruling as to absorption; (iii) the assessment of the new rates as maximum rates; or, (iv) lower rates without the assumption of absorption.

Decision of February 1968

On 21 February, the Full Bench gave its decision, the chief clause reading 'We have decided that 70 per cent of the prescribed increases . . . of the award shall be payable in accordance with the decision of December 11 and that 30 per cent shall be deferred.' However, December increases of less than \$1.60 were not to be varied, and no December increases greater than \$1.60 were to be reduced below this amount.

On the absorption issue, the Bench rejected the employers' application for absorption, but accepted the possibility that some absorption might be inescapable.

The Full Bench was unwilling to vary the December increases. It also decided that the matter of the deferred 30 per cent part of the increase, could be reviewed in August.

The Full Bench again emphasised the difference between *economic cases* and *work value cases* stating that those who constitute benches dealing with work value cases in other awards should arrive at their decisions without being bound to follow what had happened in the metal trades award.

Decision of August 1968

In August 1968, the Commonwealth Arbitration Commission decided that the 30 per cent segment deferred in its February award should be paid in the first pay period on or after 21 August.

Decision of Tasmanian Wages Board, March 1968

Test Case: On 5 February 1968, the Electrical Engineers' Wages Board met to hear claims based on the Metal Trades work value decision given in the Federal jurisdiction on 11 December 1967. This Board's deliberations were adjourned and a wider conference was convened so the matter under review could be treated as a test case for all Metal Trades classifications in the State jurisdiction.

The essence of the claim was: (i) electrical tradesmen with \$13.90 margins should receive a \$7.40 increase (fitters in the Federal jurisdiction had received a \$7.40 increase in the December decision; (ii) the minimum margin in the determination should not be less than \$7.20.

Argument: The employers argued that acceptance of the claim as it stood would perpetuate a differential between Tasmanian and Federal rates; there might have been justification for a differential in the past but this had disappeared because the December Federal rates had been established by a work value enquiry. The Federal rates should be accepted unless an independent work value enquiry were held in the State jurisdiction.

Determination: The Chairman's recommendation, given on 14 March 1968, was to vary the determination as follows: (i) increase by \$5.80 the margin paid to highly skilled tradesmen covered by the award; (ii) increase less skilled classifications by smaller amounts, e.g. \$0.25 for an electrical fitter's assistant; and (iii) increase apprentices' rates.

The claim for the full \$7.40 was rejected, the Chairman stating that the differential between the Federal and State margins for tradesmen was an interim adjustment against the long awaited re-assessment of the tradesman's margin in the Federal Metal Trades Award.

The determination in the test case was later used as a basis for variation of rates in determinations of a number of Wages Boards, including Plumbers', Automotive Industry, Marine Boards, Emu Bay Railway, Mechanical Engineers and Founders, Electrolytic Zinc, etc.

It will be noted that the quantum of increase granted (\$7.40) was reduced to \$5.20 in the Federal award of February 1968; so, in actual fact, the State test case did not have the effect of reducing the differential between Tasmanian and Federal rates. The award of 6 August, by restoring the \$7.40 increase, had the effect of bringing Commonwealth and State margins to the same level.

The movement in the two jurisdictions is shown in the following table:

Tasmanian and Federal Jurisdictions: Key Tradesmen's Margins

Date of Award or Determination (a)	Federal Award: Margin of Fitter	Tasmanian Determination: Margin of Electrical Fitter
Prior to Award of 11 December 1967 ..	\$ 12.30	\$ 13.90
Award of 11 December 1967	19.70	..
Award of 21 February 1968	17.50	..
Determination of 14 March 1968 .. ..	..	19.70
Award of 6 August 1968	19.70	..
Increase	7.40	5.80

(a) Date of giving decision, not the effective date for payment of new rate.

Total Wage Concept

General

In the period 1953-1963, Metal Trades cases with nation-wide implications came before the Commonwealth Court (later the Commission). These were of two kinds: (i) for basic wage variation (each year from 1956 to 1964); (ii) related to margins (1954, 1959 and 1963). Basic wage increases were granted in 1956, 1957, 1958, 1959, 1961 and 1964, but refused in 1960, 1962 and 1963.

1965 The Commission considered two claims: (i) from the employers, for the fixation of a total wage; and (ii) from the unions, for an increase in the basic wage. On 29 June, the Commission rejected the claim for acceptance of the total wage principle as such but awarded an increase in margins, such increase to be calculated as follows: 1.5 per cent of total wage (total wage being defined as basic wage plus margin). The increase calculated in accordance with this formula was to be added to the margins component of award wages.

1966 (i) The employers again claimed for the fixation of a total wage, while the unions presented claims affecting both the basic wage and margins. Without rejecting the concept of a total wage, the Commission increased the basic wage by \$2 with effect from 11 June 1966 but deferred making any decision on margins arranging for an investigation into the margins prescribed in the Metal Trades Award, to obtain data which would assist in fixation of new rates based on work value considerations. It also ordered that the *minimum wage* paid under the Metal Trades Award should include a margin of \$3.75 above the appropriate basic wage.

(ii) Later in the year, the unions made a claim for an interim margins increase, the investigation by the Commissioner into work value aspects not having been completed. The claim was based on general economic grounds, i.e. erosion of purchasing power and increased productivity. In December, the Commission awarded margin increases in accordance with the following formulae:

Commonwealth Interim Margins Award, 1966

Margins in Current Awards	Percentage Increase Awarded
Under \$5.00	1.0 per cent of total wage
\$5.00 but less than \$7.50	1.5 per cent of total wage
\$7.50 but less than \$11.20	2.0 per cent of total wage
\$11.20 or more	2.5 per cent of total wage

The increase, calculated in accordance with the formula in the table, was to be treated in the same manner as the 1965 increase, i.e. added to current margins.

1967 The Commission heard a claim from the employers for fixation of a total wage, and a claim from the unions for increases in the basic wage and in margins. On 5 June, it gave its decision, and abolished the concept of the basic wage.

The Commission awarded \$1 increases in total wage for both males and females, disregarding the 75 per cent relativity previously maintained in the male and female basic wage. This was a deliberate step, the Commission stressing the need for investigation and debate in the formulation of a policy aimed at gradually adjusting female total wages where adult males and females do equal work.

The Commission said that in future annual reviews, awards could be expressed in any one of four possible ways: (i) a flat amount added to the total wage (as in 1967); (ii) a flat percentage applied to the total wage (as in 1965); (iii) varying percentages applied to varying levels of total wage (as in December 1966); (iv) an entirely new formula. With regard to (iv), the Commission stated: 'We will not attempt to tie the hands of future benches in this regard.'

The 1967 award meant the end of separate awards for the basic wage and for margins; the Commission's annual review has since been concerned with the total wage and the case for an increase in the total wage argued on general economic grounds, principally erosion of purchasing power and increased productivity. While margins cases, as such, can no longer be argued, provision still exists in the arbitration system for a re-assessment of work value for individual occupations, any new rates being expressed as total wages and not as margins variations.

In the July 1966 award, the *minimum total wage* for a male adult employed under the Metal Trades Award in Hobart was fixed at \$37.15 (i.e. \$3.75 above the Hobart Federal basic wage \$33.40). As a result of the June 1967 determination, this *minimum total wage* rose to \$38.15.

- 1968 The applicant metal trades unions asked for restoration of the basic wage concept (and therefore also the margin concept). In July 1966, the Sydney basic wage in Federal awards had been fixed at \$33.50 and in June 1967, the concept of a Federal basic wage was abolished; in their August 1968 case, the applicant unions asked for the Sydney basic wage to be fixed at \$44.60.

As an alternative, if the Commission again insisted on retaining the total wage concept, the applicant unions asked for an increase of \$7.30 in all wages, including the standard minimum rate of \$38.25 (Sydney) or \$38.15 (Hobart).

The Commission's decision: (i) rejected the claim for restoration of the basic wage; and (ii) increased adult male and female award rates by \$1.35 per week. The effect in Hobart was to make the standard minimum rate \$39.50.

- 1969 The Metal Trade Unions again presented the test claim in the 1969 National Wage Case. The unions claimed for the re-introduction of basic wages and for an increase in the last existing basic wage of \$12.30. The unions also requested the re-introduction of quarterly adjustments of basic wages according to movements in the Consumer Price Index.

However, if the basic wage was not restored, the Unions sought an increase in the minimum wage of \$12.30, and for wages above the minimum an increase of \$9.65; the union claim, assuming that the total wage concept was retained, also asked for automatic quarterly adjustments to the minimum wage.

The Commission handed down its judgment on 1 December 1969. It granted a flat three per cent increase in total award wages for all wage earners covered by the Federal Metal Trades Award. It also increased the minimum wage by \$3.50 per week. The effect in Hobart was to make the standard minimum rate \$43.00 per week.

The Commission rejected the unions' claims for the re-introduction of basic wages and their automatic adjustment as well as for the introduction of automatic adjustments to minimum wages.

A more detailed discussion of the 'Total Wage Concept' appears in the 1970 *Year Book*.

Total Wage Concept in Tasmania

The Commonwealth award of June 1967 was followed by a test case argued before the Chairman of the State Wages Boards. The employers asked for adoption of the total wage concept. The unions opposed this and argued for a \$7.30 increase in the basic wage; if a lesser amount were determined, then a *minimum total wage* of \$40.70 should nevertheless be fixed.

The decision in the test case (Electrical Trades) was that both male and female rates should be increased by \$1; the increase, however, should be regarded as *raising the basic wage* which would be retained for the present in State determinations. In the National Wage Case of October 1968, the *total wage concept* was again upheld but State Wages Boards did not follow the Federal lead; the basic wage was retained in State determinations, expressed as \$35.75 (male) and \$27.40 (female).

Following the 1969 National Wage Case, the Ironmongers' Wages Board was convened and the hearing took the form of a test case for the other Wages Boards.

In the determination handed down on 19 December 1969, the chairman of the Ironmongers' Wages Board rejected the employers' claims for the abolition of the basic wage and margins, and the introduction of a total wage. The basic wages for adult males and females were increased to \$36.80 and \$28.20 respectively and margins in awards were increased by three per cent.

The increases in the basic wage were arrived at by applying the three per cent formula; and since margins were also increased by three per cent, it follows that precisely the same result was achieved in both the Commonwealth and State jurisdiction.

Equal Pay Legislation

Introduction

The concept of 'equal pay' has achieved partial recognition in some Australian States because there exist occupations in which men and women perform work which is identical (e.g. teaching, medical practice, etc.); such identity has given birth to industrial claims based on the principle of 'equal pay for equal work'. The logic of such occupational situations was ignored in the past and it was only in 1950 that the Commonwealth Court of Conciliation and Arbitration fixed the female basic wage at 75 per cent of the male rate (it had previously been as low as 54 or 56 per cent). With regard to margins, there has been no universal rule but, in the Commonwealth Public Service, for example, certain female employees receive the same margin as males, but only the female basic wage.

N.S.W. Legislation (1959)

The first acceptance of the principle of equal pay for equal work came in N.S.W. in 1959, the Industrial Arbitration Act being amended to provide equal pay for males and females under certain circumstances. If the Industrial Commission or a Conciliation Committee was satisfied that male and female employees under an award were performing identical work, it was to prescribe the same margin for males and females. The basic wage was to be adjusted to equal the male rate in annual five per cent increments spread over the period 1959-1963.

Tasmanian Legislation (1966)

The N.S.W. legislation applied to employees in both the private and public sectors (excluding those in Commonwealth employment or under Commonwealth awards). In Tasmania, the approach to the problem was different in that the Parliament in 1966 passed legislation affecting only employees in the public sector. The *Public Service (Equal Pay) Act* 1966 applies to those employed by the State Government or employed by State authorities, e.g. the teaching service, the police force, the railway service, etc. The Act requires that wage-fixing authorities must first be satisfied in any application, that certain female employees are performing 'work of the same or a like nature and of equal value'. If this is established, then the authority is required to fix the same margins for all employees, irrespective of sex. This does still not give equal pay due to the lesser female basic wage. Accordingly the Act provides for annual five per cent increments in the female basic wage (80 per cent of the male basic wage from January 1968, 85 per cent from January 1969 and so on with equality reached in 1972).

The wage-fixing authorities specified in the Act include Wages Boards, the Public Service Tribunal, the Public Service Commissioner and any other person or body required to act as such by law. In actual practice, the majority of claims for an award variation will be made to the Public Service Tribunal, the principal wage-fixing authority for employees in the public sector.

National Wage Case, 1967

In awarding the \$1 increase to both males and females, the Commonwealth Conciliation and Arbitration Commission departed from the principle of maintaining a 75 per cent ratio between the male and female basic wage. This was done deliberately and the Commission's pronouncement in June 1967 referred to the eventual possibility of equal pay for equal work.

While the basic wage continues to be prescribed in Tasmanian State awards, the provisions of the *Public Service (Equal Pay) Act* remain effective. If the total wage concept is adopted in State awards before 1972, it will be necessary to amend the Act and write new provisions so that those entitled to equal pay may receive it in accordance with the original programme.

National Wage Case, 1968

The award of the Commonwealth Commission, handed down on 4 October, gave an *equal increase* to both males and females; all award wages were increased by \$1.35.

Teachers' Case, 1968

In June 1968, the Public Service Tribunal gave a ruling affecting Tasmanian women teachers employed by the State Government; it held that they were doing work of the same or a like nature and of equal value. In general, women teachers were already receiving the same margins as men so the effect of the Tribunal's decision was to increase the base rate component of their salary to 80 per cent of the male base rate, with effect from 23 May 1968. (A teacher's salary in June 1968 had three components: (i) base rate, \$33.40 male or \$25.05 female per week; (ii) \$1 per week loading, male and female; (iii) margin. The female base rate, \$25.05, was 75 per cent of the male base rate, \$33.40.) In accordance with the Act, the base rate for females will be steadily advanced until it equals the male rate in 1972.

State Employees Receiving Equal Pay

Since the May 1968 Teachers' determination, equal pay has been extended to all areas where the Public Service Tribunal has been satisfied that the work performed by male and female employees is of the same or similar nature and of equal value.

National Equal Pay Case 1969

Introduction

Two benches of the Conciliation and Arbitration Commission handed down a joint decision on the National Equal Pay Case on 19 June 1969. The decision was important as, for the first time, the concept of 'equal pay for equal work' was accepted in principle by the Commission. However, equal pay is not to be granted automatically; equality of work must be proved before an increase will be granted to female workers.

Commission's Findings

The four broad issues which emerged from the submission were:

(1) *The History of Wage Fixation in the Federal System:* The Commission considered that although there was still a relic of the concept of the family wage in most of the present total wages, it no longer had the conceptual or economic significance which it once had, and was no real bar to a consideration of equal pay for equal work.

(2) *The Attitude of Australian Governments:* The Commission viewed the fact that N.S.W., S.A., W.A. and Tasmania had passed virtually identical legislation on equal pay as significant for two reasons: (i) because the existence of this legislation demonstrates, by implication, that the community supports the concept of equal pay for equal work; and (ii) because the Commission thought it undesirable to adopt an approach which was different from that applied by the laws of those States.

The Commission also viewed the support of the States' legislation by the Commonwealth Government, the Commonwealth Public Service Board, and the Commonwealth Instrumentalities as significant.

(3) *The International Material:* The Commission viewed the recommendations of the International Labour Organisation as representative of international thinking on the question of equal pay for equal work, but observed that their meaning in the Australian scene was by no means clear.

(4) *The Economic Effect:* The Commission considered that if gradual implementation of equal pay was adopted in line with the relevant State legislation (i.e. in progressive steps from 1969 to 1972) no significant economic problems would arise from the decision.

Conclusions

The Commission accepted the concept of 'equal pay for equal work', implying the elimination of discrimination based on sex alone. It viewed the case as a question of principle, as the granting of the claim was intended to be no more than a first step towards the application of a principle, and the equality of the work must be first determined before an increase to females could be awarded.

Principles to be applied

The Commission stated that it would be necessary for a separate examination to be made of each determination and award in respect of the awarding of equal pay, and suggested that certain clearly defined principles should be applied in deciding these applications.

Where the Arbitrator or the Commissioner is satisfied that equal pay should be awarded, the Commission considered that the implementation of such a decision should be on a progressive basis over four years as follows (provided that no female rates should be reduced by operation of this formula):

Equal Pay Case Decision, 19 June 1969

Date of Operation	Amount of Female Rate
Beginning of first pay period to commence on or after—	
1 October 1969	85%
1 January 1970	90%
1 January 1971	95%
1 January 1972	100%

} of the male rate at that date

The arguments presented and the principles to be applied when establishing an equal pay situation are given in the 1970 *Year Book*.

Weekly Wage Rates in Tasmania

Definitions

In this section, 'weekly wage rates' is used as a short title for '*weighted average minimum* weekly wage rates'. The rates are those applicable to adult males and adult females, and are those fixed in *awards*.

The minimum wage is the lowest rate payable for a particular occupation, and for most occupations it comprises the basic wage and 'secondary' wage payments, i.e. additional amounts such as margins for skill, etc. and loadings of various kinds. In the majority of cases such rates are prescribed in awards or determinations of Commonwealth or State industrial authorities or in agreements registered with them. Some rates are prescribed in unregistered agreements between employers and employees. The decision of the Arbitration Commission (June 1967) to end the basic wage does not affect the compilation, the basic data still being minimum award wages for individual occupations. The position in 1969 was that the basic wage was retained in the awards of certain States (including Tasmania) but no longer prescribed in the awards of other States or of the Commonwealth.

Weighting: To arrive at a weighted average rate for a particular field (e.g. rate for occupations in Tasmania covered by Commonwealth awards) certain data are required. The basic initial information is the award rate applying to each occupation and its relative significance (broadly, the numbers in each occupation).

The calculation of average minimum rates is based on the occupational structure existing in 1954. Weights for each industry and each occupation were derived from two sample surveys made by the Bureau in that year. The first was the Survey of Awards in April 1954 which showed the number of employees covered by individual awards, determinations and agreements, and provided employee weights *for each industry* as well as a basis for the Survey of Award Occupations made in November 1954. This second survey showed the number of employees in each occupation within selected awards, etc. in the various industries, thereby providing weights *for each occupation*.

The individual minimum wage rates combined to give the averages shown in the tables are those for representative occupations within each industry. They have been derived entirely from representative awards, determinations and agreements in force at the end of each period commencing with March 1939 for adult males, and March 1951 for adult females. In Australian figures for adult male rates, 2,313 individual award occupations are included; for adult female rates, 515; a lesser number is used in determining Tasmanian rates. By use of the industry and occupation weights derived from the surveys of 1954, rates for these occupations were combined to give weighted averages for each industry group for each State and for Australia. Because of coverage difficulties, the rural industry is not included.

Since the aim is to measure movements in prescribed minimum rates of 'wages' as distinct from 'salaries', those awards, etc. which relate solely or mainly to salary-earners are excluded.

Weighted averages of the components of the total minimum weekly wage rate, i.e. basic wage, margin and loading, are calculated separately for adult male employees covered by Commonwealth awards, etc., and for those covered by State awards, etc.

'Commonwealth Awards, etc.': These include awards of, or agreements registered with, the Commonwealth Conciliation and Arbitration Commission, and determinations of the Commonwealth Public Service Arbitrator.

'State Awards, etc.': These include awards or determinations of, or agreements registered with, State industrial tribunals, together with certain unregistered agreements, where these are dominant in the particular industries to which they refer. (In Tasmania, the principal tribunals are the State Wages Boards.)

'Basic Wage Rates': These are weighted averages of the weekly rates prescribed in awards, etc. for the occupations included in the calculation. For industries other than mining, metropolitan basic wage rates have generally been used. However, there are a number of occupations for which basic wage rates other than the metropolitan rate are prescribed. In all such cases, the basic wage rate actually paid is used in the tables. As a result, the weighted average basic wage shown in this section differs from the Hobart basic wage appearing elsewhere.

'Margins': These are minimum amounts, in addition to the basic wage, awarded to particular classifications of employees for special features such as skill, experience, arduousness or other like factors.

'Loadings': These include industry loadings and other general loadings prescribed in awards, etc. for the occupations included in the calculation. Loadings that are not applicable to all workers in a specified award occupation (for example, those payable because of length of service; working in wet, dirty or confined spaces, etc.) are not included in the calculation.

Male and Female Rates

The following table summarises weekly wage rates for adult males and adult females in Tasmania from 1954 onwards. The averages include Commonwealth and State awards, etc. and are for all industry groups combined.

**Weighted Average Minimum Weekly Wage Rates (a)
Adult Males and Adult Females—All Groups**

(\$)

End of December—	Adult Rate		End of December—	Adult Rate	
	Male	Female		Male	Female
1954	28.77	19.76	1962	36.48	24.83
1955	29.36	20.00	1963	37.29	25.21
1956	31.39	21.52	1964	39.69	27.04
1957	31.85	21.90	1965	40.73	27.94
1958	32.36	22.12	1966	43.23	29.80
1959	34.71	23.42	1967	45.31	31.62
1960	35.15	23.88	1968	48.98	33.46
1961	36.27	24.82	1969	51.97	36.86

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, etc.

Limitation: The wage rates shown in the tables in this section should not be regarded as actual current averages, but rather as indexes expressed in money terms, indicative of trends. The wage rates do not measure the relative level of minimum wages as between States.

Minimum weekly wage rates for adult males should not be compared with 'average weekly earnings per employed male unit' appearing in a later section of this chapter; the latter includes not only the earnings of adult wage-earners but also those of salaried employees, junior wage-earners and part-time and casual employees.

Rates in Industry Groups

In the next table, details are shown of Tasmanian weighted average minimum weekly wage rates payable for a full week's work (but excluding overtime) for adult males and females as prescribed in awards, determinations, etc. of the various industry groups; also the same information converted to index numbers with the Australian weighted average minimum weekly wage rate for 1954 equated with 100. It should be noted that the figures shown in this table are statistical averages and should not be confused with the *minimum wage* prescribed by the Commonwealth Conciliation and Arbitration Commission.

**Weighted Average Minimum Weekly Wage Rates and Index Numbers
Adult Males and Adult Females—Industry Groups, 31 December 1969**

Industry Group	Adult Males		Adult Females	
	Rates of Wage (\$)	Index Numbers (a)	Rates of Wage (\$)	Index Numbers (a)
Mining and Quarrying	54.00	191.2	..	..
Manufacturing—				
Engineering, Metals, Vehicles, etc. ..	52.24	185.0	37.67	189.2
Textiles, Clothing and Footwear ..	46.13	163.4	32.59	163.7
Food, Drink and Tobacco	48.96	173.3	33.90	170.3
Sawmilling, Furniture, etc.	48.52	171.8	32.52	163.4
Paper, Printing, etc.	51.47	182.2	36.41	182.9
Other Manufacturing	49.02	173.6	..	..
All Manufacturing Groups	50.27	178.0	33.91	170.4
Building and Construction	52.03	184.2	..	..
Railway Services	51.69	183.0	41.60	209.0
Road and Air Transport	51.35	181.8	..	..
Shipping and Stevedoring	55.52	196.6	..	..
Communication	63.34	224.3	41.75	209.7
Wholesale and Retail Trade	52.76	186.8	39.63	199.0
Public Authority (n.e.i.) and Community and Business Services	55.39	196.1	41.82	210.0
Amusement, Hotels, Personal Service, etc. . .	46.87	166.0	34.98	175.7
All Industry Groups	51.97	184.0	36.86	185.6

(a) Base of index numbers: weighted average minimum weekly wage rate, Australia, 1954=100.0.

Index Numbers

In the previous table, the minimum average weekly wage rates have also been expressed as index numbers. It should be emphasised that the rates themselves are not actual current averages but are rather indexes expressed in money terms; as such they are indicative of trends rather than of levels.

The following table shows, in summary form, the index numbers for adult male and adult female weighted average minimum weekly wage rates in Tasmania from 1963:

**Weighted Average Minimum Weekly Wage Rates—Index Numbers, All Groups
Adult Males and Adult Females**

End of December—	Index Numbers (a)		End of—	Index Numbers (a)	
	Male	Female		Male	Female
1963	132.0	126.6	1968—December ..	173.4	r 168.1
1964	140.5	135.8	1969—March ..	174.0	168.7
1965	144.2	140.4	June ..	175.1	169.5
1966	153.1	149.7	September ..	178.0	178.1
1967	160.4	158.8	December ..	184.0	185.2

(a) Base of index numbers: weighted average weekly wage rate, Australia, 1954=100.0.

Components of Weekly Wage Rates (Male)

The next table shows the adult male weighted average minimum weekly rate, according to its Commonwealth and State award elements, *for Tasmania*. The State award element is shown in its component parts (basic wage, margin and loading). However, adoption of the total wage concept in June 1967 precludes a similar dissection of Commonwealth awards (Commonwealth awards prior to June 1967 are also shown in total only).

**Weighted Average Minimum Weekly Wage Rates Each December (a)
Components of Wage Rate, All Groups—Adult Males
(\$)**

Particulars	1964	1965	1966	1967	1968	1969
Commonwealth Awards ..	39.14	40.21	42.71	44.58	48.46	51.44
State Awards, etc.—						
Basic Wage ..	31.39	31.39	33.39	34.40	35.75	36.80
Margin ..	7.94	8.86	9.13	10.15	r 12.05	13.92
Loading ..	1.21	1.27	1.61	1.88	1.97	2.07
Total ..	40.54	41.52	44.14	46.43	r 49.77	52.80
All Awards ..	39.69	40.73	43.27	45.31	r 48.98	51.97

(a) For a full week's work (excluding overtime) as prescribed in awards, determinations, etc.

Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations and agreements were: December 1939, Commonwealth awards, etc., \$9.70, State awards, etc., \$9.98, all awards, etc., \$9.83; December 1949 Commonwealth awards, etc., \$16.83, State awards, etc., \$16.90, all awards, etc., \$16.87; December 1959, Commonwealth awards, etc., \$34.93, State awards, etc., \$33.98, all awards, etc., \$34.47; December 1969, Commonwealth awards, etc., \$51.44, State awards, etc., \$52.80, all awards, etc., \$51.97.

Australian Rates

In the next table, rates and index numbers are shown for each Australian State:

Australia—Weighted Average Minimum Weekly Wage Rates (a)—All Groups Adult Males

End of December	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Australia
RATES OF WAGES (\$)							
1965	41.08	40.34	41.66	39.48	40.49	40.73	40.76
1966	43.27	42.78	43.56	41.75	43.37	43.27	43.04
1967	45.24	44.59	45.55	43.78	45.08	45.31	44.96
1968 <i>r</i>	49.46	48.86	49.01	48.23	47.72	48.98	48.98
1969	52.35	51.70	51.91	50.68	50.67	51.97	51.83
INDEX NUMBERS (b)							
1965	145.5	142.8	147.5	139.8	143.4	144.2	144.3
1966	153.2	151.5	154.2	147.8	153.6	153.1	152.4
1967	160.2	157.9	161.3	155.0	159.6	160.4	159.2
1968 <i>r</i>	175.1	173.0	173.5	170.8	169.0	173.4	173.4
1969	185.4	183.1	183.8	179.4	179.4	184.0	183.5

(a) For a full week's work (excluding overtime), as prescribed in awards, determinations, etc.

(b) Base of index numbers: weighted average minimum weekly wage rate, Australia, 1954=100.0

Hourly Wage Rates in Tasmania

General

Hourly wage rates is the short title for '*weighted average* minimum hourly rates payable'. The concept is completely analogous to that embodied in weighted average minimum weekly wage rates and the calculation is similarly based on rates prescribed in awards or determinations of Commonwealth and State industrial authorities or in agreements registered with them.

Definitions

Hours of Work: In the fixation of weekly wage rates, most industrial tribunals prescribe the number of hours constituting a full week's work for the wage rates specified. The hours of work so prescribed form the basis of the compilation of the weighted averages of hourly rates.

Rural industry is excluded from the calculation of weighted average minimum weekly wage rates. Rural industry, and in addition the shipping and stevedoring industry, are excluded from the calculation of weighted average minimum hourly wage rates; the shipping and stevedoring group is excluded since definite particulars for the computation of hourly wage rates are not available.

The 40-hour week has operated in Australia generally from 1 January 1948 (N.S.W., from 1 July 1947). Nevertheless the number of hours constituting a full week's work (excluding overtime) differs between occupations and/or States. The weighted average standard hours of work (excluding overtime) prescribed in awards, determinations and agreements for a full working week, in respect of adult male workers in all industry groups except rural, and shipping and stevedoring, at 30 June 1967, were: N.S.W., 39.95; Victoria, 39.97; Queensland, 39.98; S.A., 39.96; W.A., 39.89; Tasmania, 39.97; Australia, 39.96. Corresponding figures for adult female workers at 30 June 1967, were: N.S.W., 39.53; Victoria, 39.81; Queensland, 39.70; S.A., 39.77; W.A., 39.78; Tasmania, 39.63; Australia, 39.67.

Weekly Wage Rate Definitions: Apart from exclusion of the shipping and stevedoring industry, the definitions in the section headed 'weekly wage rates' apply with equal force to the calculation of hourly wage rates.

Summary of Details

The following table shows, for Tasmania, weighted average minimum hourly wage rates for adult male and adult female workers in all industries (except rural, and shipping and stevedoring) since 1939:

**Weighted Average Minimum Hourly Wage Rates, All Groups
Adult Males and Adult Females**

End of—	Males (a)	Females (b)	End of—	Males (a)	Females (b)
RATE OF WAGE (\$)					
December—1939 ..	0.2095	<i>n.a.</i>	December—1966 ..	1.0842	0.7520
1945 ..	0.2642	<i>n.a.</i>	1967 ..	1.1365	0.7979
1950 ..	0.4952	<i>n.a.</i>	September—1968 ..	1.1874	0.8064
1955 ..	0.7371	0.5056	December—1968 ..	<i>r</i> 1.2288	<i>r</i> 0.8444
1960 ..	0.8808	0.6037	March —1969 ..	1.2329	0.8475
1963 ..	0.9340	0.6361	June —1969 ..	1.2396	0.8516
1964 ..	0.9946	0.6822	September—1969 ..	1.2524	0.8950
1965 ..	1.0211	0.7052	December—1969 ..	1.2948	0.9323
INDEX NUMBERS (c)					
December—1939 ..	29.6	<i>n.a.</i>	December—1966 ..	153.2	149.9
1945 ..	37.3	<i>n.a.</i>	1967 ..	160.6	159.0
1950 ..	70.0	<i>n.a.</i>	September—1968 ..	167.8	160.7
1955 ..	104.2	100.8	December—1968 ..	<i>r</i> 173.7	168.3
1960 ..	124.5	120.3	March —1969 ..	174.2	168.9
1963 ..	132.0	126.8	June —1969 ..	175.2	169.8
1964 ..	140.6	136.0	September—1969 ..	177.0	178.4
1965 ..	144.3	140.6	December—1969 ..	183.0	185.8

(a) All industry groups except rural, and shipping and stevedoring.

(b) All industry groups except rural, mining and quarrying, and building and construction.

(c) Base of index numbers: weighted average hourly wage rate, Australia, 1954=100.0.

Average Weekly Earnings in Tasmania

Source of Data

The figures in the following section are derived from particulars of employment and of wages and salaries recorded on pay-roll tax returns, from other direct collections and from estimates of the unrecorded balance. (In general, businesses with pay-rolls of less than \$1,734 per month are exempt from pay-roll tax and do not need to supply monthly details of employment and of wages and salaries.) Pay of members of the defence forces is not included.

Definitions

'Employed Male Unit': This is a special unit devised to overcome the difficulty that particulars of wages and salaries are not available separately for males and females. (The basic data available are the number of males, the number of females and the total pay-roll only.) The number of females is converted to a *lesser equivalent number* of males by taking into account the approximate ratio of female to male earnings; a divisor for deriving average 'male' earnings is then obtained by adding the actual number of males to the calculated number of 'male equivalents'. The divisor so obtained consists

of 'employed male units'. As it is not possible to estimate the ratio of male to female earnings in the several States, the same ratio is used for each State. Because the actual ratio may vary between States, precise comparisons between average earnings in different States cannot be made on the basis of the figures.

Components of Pay-roll: Pay-roll includes, in addition to wages at award rates, the earnings of salaried employees, over-time earnings, over-award and bonus payments, and payments made in advance or retrospectively, (e.g. advances of annual leave pay). Included also are the wages and salaries, not only of adults, but also of juniors; the earnings may relate to full-time, part-time or casual workers.

Invalid Comparison: Average earnings per employed male unit cannot be compared with male weighted average minimum weekly wage rates shown in the previous section. Weighted average minimum weekly wage rates relate to award rates for adult male wage earners in non-rural industry for a full week's work, at the end of each month or year; the average weekly earnings per employed male unit are derived from the pay-roll concept shown in the previous paragraph, and obviously cover a wider field of earnings and of wage and salary earners.

Seasonal Influence: Quarterly figures are affected by seasonal influences. Comparisons as to trends are generally best made by relating complete years or corresponding periods of incomplete years. However, from December quarter 1963, comparisons with corresponding quarters of earlier years are affected by additional prepayments arising from three weeks' leave.

Annual and Quarterly Details

The following table shows, for Tasmania, average weekly earnings per employed male unit; the figures are arranged both as quarterly and annual averages.

Average Weekly Earnings Per Employed Male Unit (a)
(\$)

Year	Average for Quarter Ending—				Average for Year
	September	December	March	June	
1959-60	40.20	42.30	40.70	44.50	41.90
1960-61	41.90	44.20	42.50	44.70	43.30
1961-62	43.00	45.80	44.50	47.80	45.30
1962-63	44.90	45.90	44.50	48.30	45.90
1963-64	46.40	50.70	46.50	49.90	48.40
1964-65	49.60	51.90	49.70	52.70	51.00
1965-66	50.50	56.40	53.10	55.20	53.80
1966-67	54.90	59.50	55.50	59.50	57.40
1967-68	58.80	63.30	58.90	62.90	r 61.00
1968-69	60.50	66.90	62.20	r 67.00	r 64.10
1969-70	67.20	72.60	65.40	73.30	70.00

(a) For definitions, see earlier section headed 'Definitions'.

Australian Details

The next table shows average weekly earnings per employed male unit for each Australian State. The calculation of the number of 'employed male units' depends on use of a common ratio of male to female earnings for all

States; because the actual ratio may vary between States, *precise* comparisons between average earnings in different States cannot be made on the basis of the figures shown:

Australia—Average Weekly Earnings Per Employed Male Unit (a)
(£)

Period	N.S.W.(b)	Vic.	Qld	S.A. (c)	W.A.	Tas.	Australia
1955-56 ..	37.90	37.80	33.00	35.90	33.90	35.60	36.70
1960-61 ..	48.10	47.20	41.60	43.40	41.60	43.30	46.00
1965-66 ..	58.60	59.20	52.50	53.80	54.10	53.80	57.00
1968-69 ..	71.60	71.20	62.60	64.30	67.20	64.10	68.90
1969-70 ..	77.40	77.00	68.40	69.90	74.90	70.00	75.00
1968, Dec. Qtr	74.30	73.30	64.70	65.90	68.50	66.90	71.30
1969, Dec. Qtr	80.60	80.00	71.40	72.30	76.60	72.60	77.50

(a) For definitions, see section headed 'Definitions.'

(b) Includes the Australian Capital Territory.

(c) Includes the Northern Territory.

Surveys of Weekly Earnings and Hours

General

Sample surveys in respect of most employers in the private sector subject to pay-roll tax have been conducted by the Bureau as at the last pay period in October. The results of the surveys are based on returns from stratified random samples of private employers subject to pay-roll tax; for Australia as a whole, the 1968 survey was based on the returns of 4,250 employers whose employees numbered 1,621,000 males and 713,000 females. The 1965 survey is not included in the following table since it was conducted for a special purpose and is not strictly comparable with those for other years.

Definitions

Weekly Earnings: gross earnings before taxation and other deductions have been made; includes overtime earnings, ordinary time earnings, shift allowances, penalty rates, commission and similar payments; and that part of paid annual leave, paid sick leave, long service leave and paid holidays taken during the specified pay-period. It includes one week's proportion of payments made other than on a weekly basis, e.g. salary paid fortnightly or monthly. Retro-spective payments are excluded.

Juniors: those under 21 years of age not paid adult rates (but 'adults' may include those under 21 years receiving adult rates).

Full-time Employees: employees who ordinarily work 30 hours or more a week and who received pay for the last pay-period in October.

Results of Surveys

The next table shows, for Tasmania: (i) average weekly earnings; (ii) average weekly hours paid for; (iii) average hourly earnings. The year 1965 has been excluded from the table (see comment under 'General').

Average Earnings and Hours, Private Employment (a)—All Industry Groups (b)

Particulars	October (c)				
	1964	1966	1967	1968	1969
Average Weekly Earnings—	\$	\$	\$	\$	\$
Adult Males	52.40	60.10	62.20	65.50	69.60
Junior Males	24.40	27.80	30.90	32.40	34.50
Adult Females	30.60	33.70	35.70	37.90	40.00
Junior Females	19.40	22.00	23.80	24.50	26.60
Average Weekly Hours Paid for—	hrs	hrs	hrs	hrs	hrs
Adult Males	41.7	42.6	42.0	42.0	42.2
Junior Males	40.1	40.7	40.4	40.7	40.2
Adult Females	39.0	39.1	38.8	38.9	38.9
Junior Females	39.7	39.5	38.9	39.2	39.0
Average Hourly Earnings—	\$	\$	\$	\$	\$
Adult Males	1.26	1.41	1.48	1.56	1.65
Junior Males	0.61	0.68	0.77	0.80	0.86
Adult Females	0.78	0.86	0.92	0.97	1.03
Junior Females	0.49	0.56	0.61	0.62	0.68

(a) Private employees only. Excludes managerial, executive, professional and higher supervisory staff. Full-time employees only included.

(b) Excludes rural industry, and private domestic services.

(c) Last pay period in October.

The following table analyses total earnings, for Tasmania, to show their overtime component in October 1969:

Average Weekly Overtime and Ordinary Time Earnings (a), Private Employment (b)—
October 1969
(\$)

Particulars	Average Weekly Overtime Earnings (a)	Average Weekly Ordinary Time Earnings (a)	Average Weekly Total Earnings (a)
Adult Males—			
Manufacturing—			
Founding, Engineering, Vehicles, etc.	7.90	66.80	74.80
Other	6.40	59.00	65.30
Total	6.80	61.30	68.10
Non-Manufacturing	8.70	62.70	71.40
All Industry Groups ..	7.70	61.90	69.60
Junior Males, All Industry Groups ..	1.80	32.70	34.50
Females, All Industry Groups—			
Adult	1.20	38.80	40.00
Junior	0.40	26.20	26.60

(a) Averages for all employees represented in the survey.

(b) Private employees only. Excludes managerial, executive, professional and higher supervisory staff. Full-time employees only included.

Minimum Wage Rates, Selected Occupations, Hobart

The following table shows minimum wage rates for selected occupations as prescribed by Federal and State awards, agreements and various determinations (both registered and unregistered) operative at 31 December 1968 and 1969. Unless specified, rates shown in the following table are for a 40-hour week. Increases reflect: (i) three per cent increase in total award rates granted in December 1969; (ii) various margin adjustments.

Selected Minimum Wage Rates, Adult Males and Females: Hobart

(£)

Industry and Occupation	31 December		Increase in Rates During Year
	1968	1969	
ADULT MALES			
Primary Production—			
Farming (General), General hand (a)	40.45	43.00	2.55
Grazing, Shearer (per 100 flock sheep) (b)	20.52	21.00	0.48
Mining and Quarrying—			
Coal Mining (c), Miner (machine)	57.40	59.10	1.70
Quarrying, Labourer	41.45	43.00	1.55
Engineering, Metals, Vehicles, etc.—			
Engineering—Fitter or Turner	55.45	57.10	1.65
Toolmaker	60.40	62.20	1.80
Textiles, Clothing and Footwear—			
Clothing Trades (Readymade), Tailor	47.05	51.60	4.55
Footwear, Maker	41.05	43.40	2.35
Textiles—Knitting, Knitter	42.50	43.80	1.30
Woollen, Weaver	40.75	42.60	1.85
Food, Drink and Tobacco—			
Aerated Water and Cordials, General Hand	40.15	43.40	3.25
Bacon Curing, Boner	57.20	58.90	1.70
Bread Baking, Doughmaker	51.55	59.80	8.25
Brewing, General hand	47.65	49.08	1.43
Butter, Cheese and Milk Processing, Butter maker	47.50	48.90	1.40
Confectionery, Confectioner (Group 1)	48.90	50.40	1.50
Jam, Fruit and Vegetable Preserving, General hand	40.35	43.00	2.65
Meat Industry—Labourer (beef, mutton)	46.70	48.10	1.40
Slaughterman (mutton)	59.45	61.20	1.75
Sawmilling, Furniture, etc.—			
Sawmilling and Timber yards—Machinist (A grade)	53.25	57.10	3.85
Sawyer (Circular)	44.95	47.00	2.05
Paper, Printing, etc.—			
Printing (General)—Bookbinder	55.45	57.10	1.65
Machine compositor	60.40	62.20	1.80
Printing (Newspapers)—Machine compositor (day work)	68.15	70.20	2.05
Machine compositor (night work) (d)	74.85	76.90	2.05
Other Manufacturing—			
Brickmaking, Drawer	43.60	44.85	1.25
Electricity Generation and Supply, Electrical fitter	60.35	62.00	1.65
Building and Construction—			
Building (e)—Bricklayer, roof tiler	64.71	69.00	4.29
Builder's labourer skilled	52.47	56.10	3.63
Builder's labourer unskilled	49.22	51.20	1.98
Carpenter	65.14	69.50	4.36
Electrician (installation)	58.95	60.60	1.65
Plasterer	64.56	69.00	4.44
Painter	64.71	68.90	4.19
Plumber	60.95	62.60	1.65

Selected Minimum Wage Rates, Adult Males and Females: Hobart—continued
(£)

Industry and Occupation	31 December		Increase in Rates During Year
	1968	1969	
Railway Services—			
Traffic—Locomotive engine driver	62.15	67.10	4.95
Porter	41.95	55.20	13.25
Road and Air Transport—			
Road Transport, Motor truck driver (over 25 cwt to 3 ton)	45.85	49.90	4.05
Tramways and buses, Bus driver (one-man operator)	55.85	57.40	1.55
Shipping and Stevedoring—			
Shipping (cargo vessels), Able seaman (f) (g) ..	46.70	54.10	7.40
Stevedoring, Wharf labourer (per hour) (b) ..	1.52	1.73	0.21
Communication—			
Post Office, Postman	47.10	50.47	3.37
Wholesale and Retail Trade—			
Butchers, General butcher	55.45	57.10	1.65
Petrol Service Stations, Attendant	40.45	44.20	3.75
Retail Stores, Shop assistant (grocery)	40.75	44.90	4.15
Wool Stores, Wool classer	52.70	57.70	5.00
Public Administration, Community and Business Services—			
Hospitals, Orderly	42.45	43.70	1.25
Other Services—Graduate engineer	70.85	81.00	10.15
Graduate scientist	65.06	74.40	9.34
Amusement, Hotels, Personal Services, etc.—			
Hairdressing, Hairdresser (men's)	50.90	52.40	1.50
Hotels (i), Barman	43.55	44.90	1.35
Restaurants (i), Cook (single)	41.45	46.20	4.75
Watchmen, Cleaners, etc., Office cleaner (day) ..	42.35	46.20	3.85

ADULT FEMALES

Textiles, Clothing and Footwear—			
Dry Cleaning, Presser	44.85	48.80	3.95
Order Dressmaking, Machinist	33.45	36.40	2.95
Readymade Dressmaking, Table hand or machinist ..	32.55	35.50	2.95
Textiles—Knitting, Machinist	31.50	32.50	1.00
Woollen, Weaver	31.80	32.80	1.00
Food, Drink and Tobacco—			
Confectionery, General hand	31.75	32.70	0.95
Jam, Fruit and Vegetable Preserving, General hand ..	30.85	31.80	0.95
Transport and Communication—			
Post Office, Telephonist (j)	37.12	38.23	1.11
Wholesale and Retail Trade—			
Retail Stores—Shop assistant (confectionery) ..	31.63	35.10	3.47
Shop assistant (drapery)	40.75	43.70	2.95
Public Administration and Community and Business Services—			
Commonwealth Public Service, Typist (k) ..	39.55	47.29	7.74
Hospital Nurses (qualified), first year	n.a.	48.90	n.a.
Amusements, Hotels, Personal Services, etc.—			
Cleaners, Office cleaner (day)	34.00	37.80	3.80
Hairdressing, Hairdresser	39.30	40.45	1.15
Hotels (i), Barmaid	39.15	44.90	5.75
Restaurants (i), Waitress	30.00	34.50	4.50
Theatres, Usher, ticket-collector, etc. (j) ..	32.85	35.80	2.95

(a) 44-hour week.

(b) Rates shown are 'not found rates'. Shearers' hours of work are 40 per week.

- (c) In addition to the rate shown, an attendance allowance is payable for each full fortnightly pay period worked.
- (d) 38-hour week.
- (e) Rates shown are weekly equivalents of hourly rates. They include allowances for excess fares, travelling time, sick leave, statutory holidays, following the job, etc.
- (f) Includes an allowance valued at \$5.47 per week for keep and accommodation.
- (g) Rates shown are for 40 hours of work; seamen are required to work 8 hours per day.
- (h) Rates shown are for casual wharf labourers on other than special cargo work.
- (i) Weekly cash payments where board and lodging are not provided.
- (j) 36-hour week.
- (k) 36 $\frac{1}{4}$ -hour week.

WAGE-FIXING AUTHORITIES

Tasmanian State Wages Boards

History

The evolution of the Tasmanian Wages Boards system is described in the 1968 *Year Book*; the following section briefly summarises the system.

Constitution

A wages board is set up for the common trade, industry or profession of each employers' group (e.g. Builders and Painters, embracing employers of bricklayers, carpenters, painters, glaziers and builders' labourers). On each board, of which there are about 70, the employers and the employees have equal representation; one board (Electrolytic Zinc) has eight representatives for each while, at the other extreme, the Fuel Merchants Board has only one representative for each. The *Wages Boards Act* 1920 was amended in 1961 to provide for a full-time government-appointed Chairman.

Members of Boards

Board members (both for employers and employees) are selected and appointed by the Minister for a three-year term. He may re-appoint the same members unless an objection is lodged, in which case fresh nominations are called for and the Minister must make a selection. If a further objection is lodged, the matter is decided by an election, the State Chief Electoral Officer usually being asked to conduct the ballot.

Legal practitioners are disqualified as members of boards and there are restrictions on the ratio of specialists who can be appointed (i.e. officers of trade unions and employers' organisations must not constitute the whole representation on any board).

Role of Chairman

The Chairman's chief power at meetings of boards derives from the fact that he has a casting vote; he wields no arbitral power but is enjoined, when there is equal division between the representative members to do all things ('whether by adjourning... by making suggestions, consulting with members... or otherwise') needful to obtain agreement of the board, before deciding the matter at issue on his casting vote. From the meeting's recorded decisions, the Chairman drafts a statement of the amended wage-rates, allowances and conditions; this is known as a *determination* and upon its gazettal it becomes law.

Test Cases

On occasion, issues are raised which obviously have very wide implications, e.g. general margins claims, claims for increased annual leave, etc. The meeting of the particular wages board raising the issue may be adjourned and a wider conference convened at which all major employer and employee groups are

represented. The question can then be argued as one affecting a number of boards, or often all boards, but the final outcome is a determination affecting the particular wages board which raised the issue. This determination then sets the pattern for the variation of determinations of other wages boards. An amendment of the Act in 1966 provides for the variation of any wages board's determination by written application of *all* representative members, if the Chairman approves; this obviates the need for many formal meetings and also allows the outcome of test cases to be speedily adopted in the determinations of all boards.

Powers of Boards

Every board *must* determine minimum rates of wages, and the ordinary hours of work for employees. It *must* determine which adult employees are tradesmen, and specify, where the proportion of junior workers is limited, the class of work they can do. There was previously a 14-day limit on retrospectivity of determinations but the Act was amended in 1967; dependent on the Chairman's decision, determinations now become effective from the date on which the first meeting was called by the Minister, or any earlier date on which a party applied to the Minister to convene a meeting.

Other working conditions, e.g. penalty rates, disability allowances, etc. *may* be the subject of wages boards' determinations. The permissive powers of the boards are contained in the Act which was amended in 1967 to permit determinations affecting bereavement leave, free protective clothing and free uniforms.

Industrial Disputes

Under the Act, the Minister may call a compulsory conference for the purpose of preventing or settling industrial disputes. Those summoned may include not only the direct participants, but also other persons concerned in industrial matters which bear on the dispute or, even more broadly, any persons at all whose attendance may facilitate a settlement. By an amendment of the Act in 1960, the conference Chairman has the power to make a written order directing certain action to be taken, if he considers it will prevent or settle the dispute; recipients of such orders are bound to comply, the penalty for ignoring an order being \$200.

The compulsory conference is presided over by a person directed by the Minister but, in practice, the Chairman of Wages Boards is given this conciliation role if his other duties permit.

The Tasmanian Public Service Tribunal

Establishment: The *Public Service Tribunal Act* 1958, together with the regulations made thereunder came into operation on 1 December 1959, and by this Act provision was made for the setting up of a single wage-fixing authority for the employees of government and semi-government instrumentalities.

Function: Briefly, the Act provides for the establishment of the Public Service Tribunal, and vests in it the power and functions of making principal awards for the purpose of determining the salaries and specified conditions of service of employees in the public service, State Parliament, the teaching service, the police force, public hospitals, the school dental nursing service, mental health services, and in various statutory authorities and State instrumentalities as prescribed. These functions include the making of determinations

in respect of hours of work, qualifications required for advancement to higher grades, and rates of relieving, travelling, mileage, proficiency, lodging and meal allowances, tool and clothing allowances.

Members: The Tribunal is composed of a full-time chairman, deputy-chairman, and eight part-time members, two being Government nominees, and the others being the elected representatives of the police force, the teaching service and the general service. For each hearing the Tribunal consists of the chairman or deputy-chairman, a Government nominee, and an appropriate elected member, according to the group affected by the claim being heard.

'Authorities' and 'Organisations': The Act provides for employer authorities and for the formation of employee organisations, known respectively as 'Controlling Authorities' and 'Service Organisations'. These, together with the Chief Secretary as Minister administering the Act on behalf of the Government, constitute the parties entitled to be represented and appear before the Tribunal in its proceedings. At present, there are 16 controlling authorities prescribed, and 27 service organisations registered under the Act, and since the individual employee has no right to instigate proceedings, all approaches to the Tribunal must be through his controlling authority or service organisation.

Lodging of Claims: Awards of the Tribunal are current for a statutory period of three years, and thereafter continue in force until revoked by a subsequent principal award. However, claims to amend an award may be made within this term on the several grounds prescribed by the Act, which include the correction of defects or anomalies, variations in Federal awards and awards of other States, and by an award-amending application agreed to by both parties. In this way, a considerable degree of flexibility is introduced and parties are allowed access to the Tribunal in the event of changed circumstances during the term of an award. In 1968, the Act was amended to allow the making of consent awards at the discretion of the Tribunal.

Obligation Imposed on Tribunal: In the exercise of its functions, the Tribunal is required to have regard to: (a) the necessity for promoting the efficiency of employees in the public service; (b) the latest awards of the Commonwealth Conciliation and Arbitration Commission; (c) the rates of remuneration, direct and indirect, and the working conditions generally, prevailing in industry; (d) any changes in the cost of living; and (e) awards affecting the public services of other Australian States and the Commonwealth, if the Tribunal considers them relevant.

Classification: In making awards, the Tribunal is empowered to determine, '... scales of salaries for grades, divisions and occupational groups of employees, and for sub-divisions of those grades, divisions and occupational groups', but the power to classify employees within these scales remains with the controlling authorities. Within two months of such a classification being made, a service organisation, any member of which is affected thereby, may apply to the Tribunal to have the classification varied or disallowed, and in dealing with such an application, the Tribunal may, if it so determines, classify or grade the holder of an individual position within the terms of the appropriate award. It has no power, except where a new position is created, or where an appeal against a classification by a controlling authority is upheld, to determine the salary to be paid the holder of a particular office, or to make a classification or grading in respect thereof.

Total Wage Decisions

1967: The total wage decision of the Commonwealth Conciliation and Arbitration Commission in June was followed shortly afterwards by an award of the Tribunal. The same quantum of increase (\$1 male and female) was

adopted but not incorporated as part of the base rate; service salaries therefore had three components: (i) base rate; (ii) margin; (iii) a \$1 loading. The base rate (\$33.40 males and \$25.05 females) was \$1 below the basic wage fixed by State Wages Boards.

1968: The Tribunal retained the service base rate of \$33.40 (males) and \$25.05 (females) but increased the loading from \$1.00 to \$2.35 per week. This decision had the same effect as the determination of State Wages Boards lifting the basic wage to \$35.75 (males) and \$27.40 (females).

1969: The Tribunal awarded a three per cent increase in total salaries and expressed its awards in terms of total salary, based on a basic salary component of \$1,920 per annum for an adult male employee.

Equal Pay Decision: In June 1968, the Tribunal gave its decision in the women teachers' equal pay case. (This is dealt with in an earlier section of the chapter.) The Tribunal has since approved equal pay in respect of other occupations within the State Public Service e.g. scientific officers, medical and legal practitioners, psychologists, librarians, architects, engineering draughtswomen, psychiatric and geriatric nurses and, in a few cases, clerks.

Industrial Disputes

Statistics of industrial disputes refer only to those involving a stoppage of work of ten man-days or more. The information is compiled from the following sources: (i) direct from employers and trade unions; (ii) reports from government departments and authorities; (iii) reports from State and Commonwealth industrial authorities; and (iv) information contained in trade journals, newspapers, etc. Particulars of some stoppages are estimated and the following statistics should be regarded only as giving a broad measure of industrial stoppages.

Industrial Disputes (a)

Year				Number of Disputes	Workers Involved	Working Days Lost	Estimated Loss in Wages
					'000	'000	\$'000
1962	..	..	..	18	5.1	4.0	35.0
1963	..	..	..	11	5.0	2.9	27.0
1964	..	..	..	8	1.9	1.9	18.0
1965	..	..	..	17	5.1	3.9	41.4
1966	..	..	..	14	2.5	3.1	34.8
1967	..	..	..	29	6.2	7.3	82.3
1968	..	..	..	28	7.8	13.0	149.0
1969	..	..	..	44	8.7	9.9	(b) 115.3

(a) Involving a stoppage of ten man-days or more.

(b) The estimated Tasmanian loss was 0.50 per cent of the Australian total in 1969.

Chapter 11

FINANCE

PUBLIC FINANCE

Commonwealth and State

Change in Relationship

Before Tasmania became an original State of the Commonwealth, the responsibility for raising revenue and borrowing loan moneys had rested with the Tasmanian Government. Due to developments since Federation, Tasmania now, in common with other Australian States, has limited ability to raise the money required for revenue and capital purposes; the Commonwealth Government, in the same period, has become almost the exclusive channel for loan funds for State purposes, and supplements State revenue by massive grants from its own funds. The emergence of the Commonwealth as the dominating influence in the financial transactions of the State Governments can be traced to three events:

- (1) under the Constitution, the States surrendered the right to levy customs and excise duties, such revenue sources passing exclusively to the Commonwealth;
- (2) under the *Financial Agreement Act* 1927, the Commonwealth became the borrowing agent for the States;
- (3) during World War II, under the Uniform Tax Scheme, the Commonwealth became the sole authority levying taxes upon the income of persons and companies, a war-time measure which has continued to this day.

The result of these changed relationships can be summarised as follows:
(i) the Commonwealth Government, as the channel for loan funds for State purposes, exercises a substantial degree of control over public investment;
(ii) to carry out functions for which their revenue is entirely inadequate, the States have become heavily dependent on the Commonwealth Government for general and specific grants; the Commonwealth Government is therefore placed in a position to exercise a substantial degree of control over the ordinary public expenditure of the States.

Principal Activities of the States

The Federal Constitution lists the matters over which the Commonwealth Parliament has power to legislate. Some of these powers are given exclusively to the Commonwealth (e.g. defence, customs and excise) but, in many matters, the Commonwealth and State Governments have concurrent powers, Commonwealth law prevailing where there is conflict. Matters other than those listed in the Constitution remain the concern of the States. Principal government activity at State level embraces education, health and welfare services, the development of internal resources, land settlement, soil conservation, maintenance of law and order and the provision of public utility services such as roads, electricity, public transport and water supply. Such activities are undertaken either by State Departments or by statutory and local

government bodies created under State legislation. The most obvious form of revenue for the discharge of these functions is State taxation but the Commonwealth exercises a practical monopoly over the more lucrative tax sources (e.g. customs and excise, income tax, sales tax, pay-roll tax, etc.). A responsibility therefore rests on the Commonwealth to supplement State revenues.

Financial Assistance Grants

The (Federal) *States Grants (Income Tax Reimbursement) Act* 1942 provided for grants to the States as compensation for vacating the field of income tax. Similar grants, referred to as Tax Reimbursement Grants, continued until 1958-59 but the passage of the (Federal) *States Grants Act* 1959 resulted in a changed formula for calculation of the grant. The essential features of the formula were as follows:

- (i) The base year grant (1959-60) for Tasmania was fixed at \$21,826,000.
- (ii) The grant for following years was calculated by applying three factors: (i) percentage increase in State population; (ii) percentage variation in Australian average wages per person employed; (iii) a constant betterment factor of 1.1 applied to the percentage wage variation.

As from 1965-66, a new formula was announced for application over a five-year period. The betterment factor was raised to 1.2 per cent and was to become a *direct multiplier* (previously the betterment factor had been applied to the percentage wage variation).

The calculation of the grant for 1968-69 illustrates the application of the new formula: (i) grant (1967-68), \$37,968,098; (ii) percentage increase in Tasmanian population in year 1968, 1.6867; (iii) percentage increase in average wages per Australian employed (1968-69 over 1967-68), 6.7516684 per cent; (iv) betterment factor, 1.2 per cent.

$$\begin{aligned}\text{Calculated grant (1968-69)} &= \\ \$37,968,098 \times 1.016867 \times 1.067516684 \times 1.012 \\ &= \$41,709,807\end{aligned}$$

The Commonwealth added a further \$499,176 to the calculated grant.

The following shows the amounts received as Financial Assistance Grants:

Financial Assistance Grants (a)—Receipts by Tasmania
(**\$**)

Year	Amount	Year	Amount	Year	Amount
1951-52 ..	7,999,974	1957-58 ..	13,435,384	1963-64 ..	27,626,296
1952-53 ..	9,069,516	1958-59 ..	14,539,428	1964-65 ..	29,297,286
1953-54 ..	9,663,204	1959-60 ..	21,826,000	1965-66 ..	32,130,632
1954-55 ..	10,152,662	1960-61 ..	23,960,360	1966-67 (b) ..	34,772,852
1955-56 ..	10,704,450	1961-62 ..	25,671,238	1967-68 ..	37,968,098
1956-57 ..	12,048,712	1962-63 ..	26,616,104	1968-69 (c) ..	42,208,983

(a) Referred to as Tax Reimbursement Grants from 1942-43 to 1958-59. (Formula grants plus supplementary grants.)

(b) Includes \$210,335 special supplementary grant.

(c) Includes \$499,176 special financial assistance grant.

The introduction of the new financial assistance grant formula in 1959 had one notable effect—it allowed S.A. to cease being a claimant State for annual allocations of the Special Grant (*Section 96*) and resulted in the claimant

States being reduced to two, Tasmania and W.A.. From 1 July 1968, W.A. ceased at its own request to be a claimant State. Following the 1970 Premiers' Conference South Australia once again chose to become a claimant State. The operation of Special Grants and their allocation is discussed in the next section.

Special Grants (Section 96 of the Constitution)

Section 96 of the Constitution reads: 'During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit'.

The Commonwealth Grants Commission was established in 1933 and consists of three members on a part-time basis assisted by a full-time staff. In its third report (1936) it fixed upon the principle of financial need, which was expressed in the following terms: 'Special grants are justified when a State through financial stress from any cause is unable efficiently to discharge its functions as a member of the federation and should be determined by the amount of help found necessary to make it possible for that State by reasonable effort to function at a standard not appreciably below that of other States'. In arriving at its recommendations, the Commission each year makes a detailed comparison of the budget results of the claimant States with those of the non-claimant States.

Prior to the passage of the (Federal) *States Grants Act* 1959, the claimant States had been Tasmania, W.A. and S.A. The new formula evolved under the *States Grants Act* 1959 had been devised partly in reaction to a claim by Victoria and Queensland to be also considered as claimant States; in effect, the new scale of increased grants under this legislation resulted in the number of claimant States falling to two, W.A. and Tasmania. The Grants Commission could then have used the accounts of the four non-claimant States to reach a basis for comparison; it finally decided to adopt a two-State standard, based on the budget of N.S.W. and Victoria. The withdrawal of W.A. as a claimant state from 1968-69 created a new position and the Commission indicated that it would apply a weighted average of all non-claimant States for the year of review 1970-71 when determining the Special Grant for Tasmania. Following a Premiers' Conference in 1970, when new formulae for Commonwealth grants to the States were announced, S.A. indicated that its difficulties were not adequately recognised and that it would therefore apply to join Tasmania as a claimant State. The following table shows Tasmanian Special Grant receipts:

Special Grant (Section 96)—Receipts by Tasmania
(\$'000)

Year	Advance Grant	Adjustment Assessed (a)	Adjustment Applied (b)	Actual Receipt (c)
1960-61 ..	6,800	+ 282	+ 1,818	8,618
1961-62 ..	8,200	+ 556	+ 1,950	10,150
1962-63 ..	9,800	+ 982	+ 282	10,082
1963-64 ..	10,200	+ 1,332	+ 556	10,756
1964-65 ..	13,618	+ 1,166	+ 982	14,600
1965-66 ..	16,400	+ 889	+ 1,332	17,732
1966-67 ..	19,500	- 1,190	+ 1,166	20,666
1967-68 ..	19,000	- 100	+ 889	19,889
1968-69 ..	18,000	..	- 1,190	16,810
1969-70 ..	22,000	..	- 100	21,900

(a) Assessment is shown against the year for which accounts have been examined by the Grants Commission, although its effect does not become apparent until two years later.

(b) The two-year delay in application is due to the Grants Commission's obligation to analyse the accounts of claimant and non-claimant States before announcing the adjustments.

(c) Advance grant plus or minus the adjustment applied.

Since 1949-50, the Special Grant has been in two parts. One part is in the nature of an advance grant to meet the estimated financial needs of the State during the current financial year. The other part is an adjustment (positive or negative), the magnitude of which will depend on whether the advance grant made two years earlier proved greater or less than the amount of financial assistance deemed justified by the Grants Commission. The Special Grant for 1969-70 was \$22,000,000 subject to a negative adjustment of \$100,000 on 1967-68 accounts.

The negative adjustment applied in 1969-70 meant that the Grants Commission considered its 1967-68 advance grant too high in the light of its critical examination, not only of the 1967-68 accounts of Tasmania, but also those of the standard States (N.S.W. and Victoria). The accounting principles followed by the Grants Commission are necessarily complicated and can be examined in the Annual Reports of that authority. It is sufficient to say that the existence of the Special Grant has exercised considerable influence on the financial policy of successive Tasmanian Governments. Two principles employed by the Grants Commission will serve to illustrate the nature of this influence:

- (1) if State taxation in a claimant State is below average rates and average exemption scales in the standard States, an unfavourable adjustment will result;
- (2) if State social service expenditure in a claimant State is above comparable per-capita expenditure in the standard States (after allowing for certain difficulties encountered in the claimant State), an unfavourable adjustment will result.

Claimant States must endeavour to raise revenue from taxation at least at the rates and exemption scales adopted by the standard States and must not exceed the per capita expenditure of the standard States in certain fields. Departure from these standards can result in adverse Grant adjustments.

The treatment of Special Grant adjustments in Tasmanian accounts is as follows:

- (1) if a favourable adjustment is made, an equal amount is paid into a suspense account (Accumulated Revenue Account) and the Consolidated Revenue Fund records only the advance grant;
- (2) if an unfavourable adjustment is made, an equal amount is transferred from the suspense account (Accumulated Revenue Account) to the Consolidated Revenue Fund. Thus the Consolidated Revenue Fund again shows as a receipt the amount of the advance grant and not, as might be expected, the advance grant *less* the unfavourable adjustment.

In effect, the State Treasury carries forward in the Accumulated Revenue Account unadjusted budget surpluses and deficits until the Grants Commission announces a favourable or unfavourable adjustment; action can then be taken to charge the net adjusted deficit against the Loan Fund.

Payments Under the Financial Agreement (1927)

Under the Financial Agreement which was entered into by the Commonwealth and the States in 1927, the Commonwealth contributes towards interest and sinking fund payments in respect of States' debts existing at 30 June 1927, and towards sinking fund payments in respect of States' debts incurred after that date for purposes other than the funding of revenue deficits.

The Commonwealth contribution towards payment of interest on the Tasmanian State debt is a constant annual sum of \$533,718 and will be continued until 1985.

The sinking fund contributions made by the Commonwealth under the Agreement in respect of States' debts vary according to the date and nature of the borrowings. On States' debts existing at 30 June 1927 the Commonwealth is making sinking fund contributions at the rate of 0.125 per cent per annum until 1985 and in respect of cash loans raised for the States since that date, the Commonwealth makes sinking fund payments for 53 years at the rate of 0.25 per cent per annum. Each State is obliged to make sinking fund payments for corresponding periods at the rate of 0.25 per cent per annum of its debt, regardless of the date on which the debt was incurred. The only exception is in relation to debt incurred for the purpose of funding revenue deficits. In these instances, the Commonwealth makes no sinking fund contributions and the States are obliged to make contributions to the sinking fund of not less than four per cent per annum. However, in respect of Treasury Bills issued to cover State revenue deficits accruing between July 1927 and June 1935, special arrangements were made under which the Commonwealth contributes 0.25 per cent per annum until June 1983, on the amount outstanding.

Recent Commonwealth sinking fund contributions in respect of the Tasmanian public debt are as follows: 1958-59, \$699,718; 1959-60, \$776,022; 1960-61, \$828,754; 1961-62, \$896,130; 1962-63, \$971,608; 1963-64, \$1,061,736; 1964-65, \$1,129,472; 1965-66, \$1,211,657; 1966-67, \$1,293,414; 1967-68, \$1,398,212; 1968-69, \$1,485,485.

The acceptance of some Commonwealth liability for interest and sinking fund payments on States' debts was only one part of a more extensive agreement setting up an Australian Loan Council and a National Debt Sinking Fund. The raising of loan money for the States under the Agreement is described later in this chapter.

Commonwealth Aid for Roads

The Federal *Main Roads Development Act* 1923 provided for annual Commonwealth contributions to the States, the basis of distribution being a formula weighted 40 per cent according to State area and 60 per cent according to State population. This basis was explicitly expressed in the *Federal Aid Roads Act* 1926 and continued to operate until 1959-60.

A new formula for distribution was embodied in the *Commonwealth Aid Roads Act* 1959 when the Commonwealth undertook to provide a total sum of \$500,000,000 over a five-year period. Of this amount, \$440,000,000 represented basic grants, and the remaining sum of up to \$60,000,000 was, subject to certain annual limits, payable to the States on the basis of \$1 for each \$1 allocated by the State Governments from their own resources for expenditure on roads over and above the amounts allocated by them for roads expenditure in 1958-59.

The amounts being made available by the Commonwealth were distributed between the States in each year in the proportion of *five per cent of the total* for Tasmania, and the balance shared between the other five States on the basis of one-third according to Census population, one-third according to area and one-third according to vehicles registered at 31 December preceding the year concerned. It will be observed that Tasmania, with less than one per cent of the area of the Commonwealth, was specifically exempted from the operation of the formula applied to the other States.

The *Commonwealth Aid Roads Act* 1964 contained provision for a second five-year plan but the total distribution over this period was raised to an amount of \$750,000,000. A third five-year plan, based upon a distribution of \$1,252,050,000, is embodied in the *Commonwealth Aid Roads Act* 1969.

Of this amount, \$1,200,000,000, is divided between the States according to a new formula which includes characteristics of the old formula and a scheduling formula suggested in a Bureau of Roads Report. The remaining \$52,050,000 is distributed thus: W.A., \$40,800,000; S.A. \$9,000,000; Tasmania, \$2,250,000. Tasmania's total receipts under the new five-year plan will be \$56,250,000. The 1969 Act specifies that 50.06 per cent of the Commonwealth grant to a State is to be spent on urban roads; 15.56 per cent on main trunk roads; 32.88 per cent on other rural roads; 1.5 per cent on planning and research. To qualify for a specified part of the total grant, each State, during the next five years, will be required to increase its expenditure on roads from its own resources above a base-year level at the same rate as the number of motor vehicles on register in the State increases.

The new method of allocating road grants, outlined above, is operative from 1 July 1969.

Details of Tasmanian receipts of Commonwealth contributions in respect of road expenditure are shown in the following table:

Commonwealth Aid for Roads—Receipts by Tasmania
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1951-52 ..	1,466	1957-58 ..	3,466	1963-64 ..	5,800
1952-53 ..	1,510	1958-59 ..	3,624	1964-65 ..	6,500
1953-54 ..	1,646	1959-60 ..	(a) 4,366	1965-66 ..	7,000
1954-55 ..	2,334	1960-61 ..	4,600	1966-67 ..	7,500
1955-56 ..	2,652	1961-62 ..	5,000	1967-68 ..	8,000
1956-57 ..	3,126	1962-63 ..	5,400	1968-69 ..	8,500

(a) Payment under the *Commonwealth Aid Roads Act* 1959 was \$4,200,000 and the balance represents a final adjustment of Commonwealth commitments under previous legislation.

Uniform Income Taxation

In December 1955, the Victorian Government took out a writ in the High Court challenging the validity of the uniform income tax legislation, the Commonwealth having been the sole collector of income tax since World War II. In particular, Victoria disputed: (i) the power of the Commonwealth to make tax reimbursement grants conditional upon the States' not levying income tax; (ii) the Commonwealth's power to provide an absolute priority for payment of Commonwealth income tax over income taxes levied by the States. In November 1956, the New South Wales Government intervened to support Victoria's challenge.

Following the challenge by Victoria to the principle of uniform income taxation, the High Court in August 1957 ruled unanimously, that the condition attaching to tax reimbursement grants, that a State should not levy income tax, was valid. This meant that any State wishing to levy income tax would be obliged to negotiate a special agreement with the Commonwealth; to tax incomes without such agreement would place the State's tax reimbursement grant in jeopardy. In 1964, the Victorian Premier proposed a *State* income tax which would be collected with existing Commonwealth machinery; the Commonwealth was not willing to provide these facilities. To date, no special arrangement has been negotiated by any State.

Summary of Commonwealth Payments

In the previous sections, the main forms of Commonwealth assistance have been described; the following table shows the total payments to Tasmania from the Commonwealth Consolidated Revenue Fund:

**Commonwealth Consolidated Revenue Fund—Payments To or For Tasmania
(\$'000)**

Item	1966-67	1967-68	1968-69
Financial Assistance Grants	34,773	37,968	42,209
Special Grants (Section 96)	20,666	19,889	16,810
Financial Agreement Payments—			
Interest on State Debts	534	534	534
Sinking Fund on State Debts	1,293	1,398	1,485
Universities—Capital and Maintenance	1,422	1,827	2,217
Colleges of Advanced Education	59	190	291
Teachers' Colleges .. .. .	..	360	960
Pre-School Teachers' Colleges .. .. .	..	..	100
School Libraries .. .. .	..	..	72
Technical Training	334	334	275
Science Laboratories (Schools)	331	420	409
Research Grants	63	158	194
Tuberculosis Hospitals—Capital and Maintenance	337	307	353
Blood Transfusion Services	24	13	25
Mental Health Institutions	823	358	399
Assistance for Deserted Wives .. .. .	..	..	67
Aboriginal Advancement .. .. .	..	..	25
Commonwealth Aid for Roads	7,500	8,000	8,500
Gordon River Road	1,596	200	..
Farming Extension Services	158	147	228
Softwood Forestry .. .. .	..	520	488
Hydro-Electricity .. .. .	..	5,300	3,200
Water Resources Investigation	18	20	74
Natural Disaster Payments	2,500	7,650	1,195
Miscellaneous	40	14	13
Total (a)	72,471	85,607	80,124

(a) This total cannot be identified *as such* in State accounts since part is taken into Consolidated Revenue, part into Loan Fund, and the balance into Trust and Special Funds.

Stamp Duty Legislation

Operative from 1 February 1968, new Victorian stamp duty legislation had the effect of taxing virtually all receipts of businesses and professional persons; also wage and salary receipts in excess of \$20 a week; and other receipts of individuals. The tax on wages and salaries, one cent per \$10, was low but appeared to be a tax on income. Victoria was not the first in the receipts tax field, Western Australia having already introduced a similar tax.

The reaction of the Commonwealth Government prior to 1 February was as follows: (i) in its role as employer, it refused to collect the tax on wages and salaries; and (ii) the Prime Minister asked the Victorian Premier to exempt from receipts duty, wages and salaries and comparable payments to individuals such as superannuation, pensions or retiring allowances. The reason for this request was stated as: 'There is no doubt in our minds that, in this respect, the new tax will operate to multiply taxes on income. On this ground we must regard the tax in its present form as being inconsistent with the principle of uniform income tax and the conditions under which the Commonwealth continues to provide general revenue assistance to the States'.

Despite these indications of the Commonwealth's attitude, the Victorian Government took no action to exempt wages, salaries and comparable payments, and the new legislation took effect from 1 February 1968.

By 1969, some form of receipts tax had been imposed by Governments in all States except Queensland. In its Tasmanian application, the receipts tax was not applied to wages and salaries.

In 1969, Hammersley Iron Pty Ltd challenged the power of the Western Australian Government to levy a duty on receipts from the export of iron ore to Japan. The High Court ruled: (i) in favour of Hammersley; and (ii) against the State taking the issue to the Privy Council. Subsequently two companies, one from Western Australia and one from Victoria, challenged the validity of the receipts tax levied in their respective States. In the High Court decision of 19 February 1970, the Western Australian and Victorian State receipt taxes were held to be a form of excise duty and therefore invalid. Following this decision, the Prime Minister indicated that the Commonwealth would collect the receipts tax on behalf of the States and that payment would be made retrospective to November 1969. Legislation introduced into the House of Representatives for this purpose was defeated in the Senate.

On 8 October 1970, the Prime Minister announced that the Commonwealth would make special grants to compensate the States for the loss of revenue and legislation was re-introduced to validate the collection of the receipts tax for the period 17 November 1969 to 30 September 1970. The legislation was passed by the Senate on 20 November 1970.

Financial Agreement Between Commonwealth and States

The original Financial Agreement was made on 12 December 1927, but Tasmania did not become a party to it until 1 July 1928. The basic intention of the agreement was a co-ordinated approach to the loan market, the establishment of sound sinking fund arrangements and the sharing of State debt charges by the Commonwealth. The main provisions are summarised as follows:

- (1) The Commonwealth assumed certain liabilities in respect of the States' debts (see previous section on interest and sinking fund payments made by the Commonwealth in respect of Tasmanian State Debt—'Payments under the Financial Agreement').
- (2) The Australian Loan Council was set up to co-ordinate the public borrowings of the Commonwealth and the States. It consists of the Prime Minister (or his nominee) as Chairman, and the State Premiers (or their nominees). Each financial year, the Commonwealth and the States submit, to the Loan Council, programmes setting out the amounts they desire to raise by loan during the next year. Revenue deficits to be funded are included in the borrowing programmes but borrowing by the Commonwealth for defence purposes is excluded from the terms of the agreement.

If the Loan Council decides that the total amount of the loan programmes for the year cannot be borrowed at reasonable rates and conditions, it then decides the amount which shall be borrowed and may, by unanimous decision, allocate that amount between the Commonwealth and the States. In default of a unanimous decision, the Commonwealth is entitled to one-fifth of the total amount to be borrowed and each State to a proportion of the remainder equal to the ratio of its net loan expenditure in the preceding five years to the net loan expenditure of all States during the same period.

Subject to the decisions of the Loan Council, the Commonwealth arranges all borrowings, including those for conversions, renewals and redemptions. However, the Commonwealth or a State may borrow for 'temporary purposes' by way of overdraft or fixed deposit, subject to limits fixed by the Loan Council. In addition, the Commonwealth may borrow within the Commonwealth, or a State within its own territory, from authorities,

bodies, institutions, or from the public by counter sales of securities, subject to Loan Council approval. Commonwealth securities are issued for money borrowed in this way and amounts so borrowed are treated as part of the borrowing programme for the year.

- (3) The Agreement involved setting up a National Debt Commission to administer one consolidated sinking fund in respect of the debt of the Commonwealth and the States. Sinking fund moneys are used to redeem unconverted securities at maturity, and to re-purchase securities on the stock market.
- (4) It was realised at the inception of the Loan Council that, in the interests of co-ordinated borrowing, the Council should be advised of borrowings of large amounts by semi-government authorities (such loan raisings do not form part of State or Commonwealth debt and therefore are not within the scope of the original agreement). A set of rules evolved in 1936 is regarded as the 'Gentlemen's Agreement' and makes provision for the submission to the Council of annual loan programmes in respect of semi-government authorities (in conjunction with the loan programmes of the governments concerned) and for the fixing of the terms of individual semi-government loans coming within the scope of the annual programme. (For 1969-70, borrowings approved by the Loan Council for Tasmanian semi-government and local government authorities amounted to \$13,600,000.)

It should be emphasised that the Australian Loan Council does not itself raise money for Tasmanian semi-government and local government authorities; its concern is to assess the total impact of government borrowing for the year and then to fix ceilings for semi-government and local government authorities in the interests of a co-ordinated programme.

Money made available from the Commonwealth Loan Fund to the State of Tasmania is recorded in two State funds, namely:

- (i) the Loan Fund, to which are paid the receipts of new cash borrowings but not allocations under the Commonwealth and State Housing Agreement;
- (ii) the Trust and Special Funds, to which are paid the allocations for housing made under the Agreement.

The following table shows Loan Council borrowing programmes undertaken on behalf of the State of Tasmania:

Tasmania—New Cash Borrowings Authorised by Australian Loan Council (a)
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1952-53 ..	26,124	1958-59 ..	25,180	1964-65 ..	34,136
1953-54 ..	28,900	1959-60 ..	27,080	1965-66 ..	34,834
1954-55 ..	25,920	1960-61 ..	28,388	1966-67 ..	37,580
1955-56 ..	26,800	1961-62 ..	28,996	1967-68 ..	40,610
1956-57 ..	22,800	1962-63 ..	30,708	1968-69 ..	42,120
1957-58 ..	24,200	1963-64 ..	32,020	1969-70 ..	45,370

(a) For State works programmes; amounts credited to State Loan Fund.

The above table excludes allocations under the Commonwealth and State Housing Agreements, which are also part of the Loan Council's programme. The following table shows allocations to Tasmania for housing purposes:

Tasmania—Allocations Under Commonwealth and State Housing Agreements (a)
(\\$'000)

Year	Amount	Year	Amount	Year	Amount
1955-56 ..	(b)	1960-61 ..	4,000	1965-66 ..	7,448
1956-57 ..	4,000	1961-62 ..	5,856	1966-67 ..	7,500
1957-58 ..	4,000	1962-63 ..	5,200	1967-68 ..	6,700
1958-59 ..	4,400	1963-64 ..	6,000	1968-69 ..	7,500
1959-60 ..	3,900	1964-65 ..	6,400	1969-70 ..	7,600

(a) For housing; credited to State Trust Funds.

(b) Tasmania's housing requirements from 1951-52 to 1955-56 were financed from the State Loan Fund.

Tasmanian Power Development

Under the (Federal) *Tasmanian Agreement (Hydro-Electric Power Development) Act* 1968, the Commonwealth agreed to provide Tasmania with bridging finance subject to an overall limit of \$47m for the Gordon River power development scheme. Hydro-electric works are normally financed from the State Loan Fund, but the scale of the Gordon scheme was such that the funds were sought from the Commonwealth in the form of eight year interest-bearing loans.

Tasmanian Public Account

The State Public Account includes the Consolidated Revenue Fund, the Trust and Special Funds, and the Loan Fund. Ordinary revenues from taxation and other sources are paid into the Consolidated Revenue Fund from which the main expenditures are for public debt charges, education, development of State resources, health and hospitals, general administration, subsidies to State business undertakings, law and order, and certain welfare activities. The Trust and Special Funds cover special transactions outside the ordinary operations of departmental expenditure, such as funds from the Commonwealth for specific purposes and moneys held for expenditure by the State at some future time. The Loan Fund receives its funds from public borrowings and the main expenditure is on State public works and on advances to State business undertakings.

A summary of transactions on the Tasmanian Public Account for a three-year period is given in the following table:

Public Account—Summary of Transactions
(\\$'000)

Particulars	1966-67	1967-68	1968-69
Cash and Investments at Beginning of Year	2,490	8,848	5,947
Receipts—			
Consolidated Revenue Fund	92,676	100,563	107,846
Special Grant Adjustment	1,166	889	—1,190
Borrowings for New Capital Purposes	r 37,622	r 40,651	42,141
Other Payments to Loan Fund	3,526	3,925	4,294
Net Increase, Trust and Special Funds	4,470	—1,613	367
Total	r 139,460	r 144,415	153,457
Expenditure—			
Consolidated Revenue Fund	93,248	102,413	111,540
Loan Fund—Public Works and Purposes	39,811	44,861	42,582
Discount	r 42	r 41	21
Total	r 133,101	r 147,315	154,143
Cash and Investments at End of Year	8,848	5,947	5,261

The State Public Account is a complete record of the Government's operation of three specific funds, i.e. Consolidated Revenue, the Trust and Special Funds, and the Loan Fund. It is by no means a complete record of government activity, since statutory authorities and semi-government authorities carry on financial operations which are not recorded in the State Public Account. Examples of such authorities are the Hydro-Electric Commission, the Transport Commission, the Agricultural Bank, etc. In a later section of this chapter, there appears the heading 'Exclusions from Consolidated Revenue' and this lists the relationship between the finances of the principal authorities and the Consolidated Revenue Fund; the general principle is that the gross receipts and gross expenditure of the authorities are excluded from the Consolidated Revenue Fund.

In the following table are shown the balances credited to each fund constituting the Public Account and the form in which the balances are held:

Public Account—Summary of Balances
(£'000)

As at 30 June	Balance				Location			
	Accumulated Revenue Account	Loan Fund	Trust and Special Funds	Total	Cash in Treasury or Bank	Advanced to Departments	Govt and Other Securities (a)	Total
1965	Dr 2,804	3,429	3,765	4,390	3,133	747	510	4,390
1966	Dr 3,493	1,755	4,228	2,490	1,213	738	538	2,490
1967	Dr 2,593	2,473	8,698	8,848	6,413	750	1,684	8,848
1968	Dr 2,423	1,285	7,085	5,947	4,602	763	582	5,947
1969	Dr 5,545	3,354	7,452	5,261	3,831	768	662	5,261

(a) Includes fixed deposits.

In the previous table, the 'Accumulated Revenue Account' is a suspense account recording accumulated surpluses and deficits in the Consolidated Revenue Fund and also the funding of deficits. Details of the account are as follows:

Accumulated Revenue Account—Summary of Transactions
(£'000)

Year	Opening Balance	Transactions			Closing Balance
		Budget Result, Consolidated Revenue	Special Grant Adjustment (a)	Deficits Charged to Loan Fund	
1965-66	Dr 2,804	—2,021	+1,332	..	Dr 3,493
1966-67	Dr 3,493	— 572	+1,166	+ 306	Dr 2,593
1967-68	Dr 2,593	—1,851	+ 889	+1,132	Dr 2,423
1968-69	Dr 2,423	—3,695	—1,190	+1,762	Dr 5,545

(a) It is Tasmanian Treasury practice to record Special Grant adjustments in the Accumulated Revenue Account and to include, in published Consolidated Revenue receipts, only the advance grant.

In the following section dealing with Consolidated Revenue, Treasury practice has been followed in eliminating Special Grant adjustments from Consolidated Revenue total receipts.

Consolidated Revenue Fund

General

The financial transactions of the State of Tasmania are recorded under (a) Consolidated Revenue, (b) Trust Funds, and (c) Loan Fund.

Payments from Consolidated Revenue are made only on the basis of authority found in: (i) the annual Appropriation Act of the Parliament; (ii) Acts of the Parliament made in previous years and under which certain annual payments are classified as 'reserved by law'; (iii) the *Public Account Act* 1957 (as amended in 1962) and the *Audit Act* 1918.

The third category of authority listed above is designed to give the Treasurer and the Government some flexibility in public expenditure since the Appropriation Act cannot be expected to anticipate, to the nearest dollar, the expenses that are likely to be incurred for each and every item. The relevant sections of the amended *Public Account Act* are 5A and 5B which provide that, in relation to Consolidated Revenue, the Treasurer may authorise transfers between votes within certain subdivisions of the appropriation and, on the authority of the Governor, supplement certain appropriations and provide funds to meet expenditure for which no other provision exists. Transfers, as described under 5A, are a matter for the Treasurer but additional expenditure, as described under 5B, needs ratification by Parliament before the close of the following financial year. Regulations 20 and 21 of the second schedule of the *Audit Act* provide for expenditure by the Treasurer to meet emergencies for which no vote exists; the Governor must first authorise such expenditure and the Auditor-General investigate the circumstances before payment can be made.

Exclusions from Consolidated Revenue

It should be observed that the Consolidated Revenue Fund does not include the complete revenue and expenditure in respect of all activities undertaken or authorised by the State Government: (i) some moneys are paid into State Trust Funds and some payments are made from such funds, e.g. the Commonwealth Aid Roads Grant is paid into the State Highway Trust Fund; (ii) the gross receipts and payments of a number of State business undertakings and State authorities are excluded from the Consolidated Revenue Fund, their relation to the fund being as follows:

- (a) In Tasmania, the railways (in common with Government shipping and road transport services) are administered by the Transport Commission and, since 1939-40, only the *net* losses of this authority have been met from the Consolidated Revenue Fund to which is credited the Commission's annual payment of debt charges (interest and sinking fund contributions) on advances made by the Government.
- (b) Omnibus services in Hobart, Launceston and Burnie are operated by the Metropolitan Transport Trust. The *net* annual loss of the authority is a charge against Consolidated Revenue which is credited with annual payment of debt charges made by the Trust on Government advances.
- (c) The gross receipts and expenditure of the Hydro-Electric Commission are excluded from the Consolidated Revenue Fund which is credited with annual payment of debt charges by the Commission. Net profit or loss on the Commission's activities is carried forward in the authority's own suspense account *and has no effect on Consolidated Revenue*.
- (d) Also excluded from the Consolidated Revenue Fund are the gross receipts and payments of: regional water supplies, Government Printing Office, Government Insurance Office, Public Trustee,

State housing authorities, Closer Settlement, Rural Credits and other activities of the Agricultural Bank, etc. In accordance with various Acts, it is usual for the net profits or losses of the previous year to be paid to or from the Consolidated Revenue Fund for the current year. Debt charges on government money loaned to the authorities are paid to Consolidated Revenue.

Consolidated Revenue Fund, Summary

The following table shows the Consolidated Revenue and Expenditure of Tasmania, the surplus or deficit, and the aggregate deficit at the end of each year. It also calls attention to the Special Grant adjustments and shows how these Commonwealth payments modify the original budget result.

Consolidated Revenue Fund—Surpluses and Deficits
(\$'000)

Year	Revenue			Expenditure	Budget Result		Aggregate Net Deficit at End of Year
	Before Adjustment	Special Grant Adjustment	After Adjustment		Before Adjustment	After Adjustment	
1959-60	48,592	+ 1,950	50,542	50,656	-2,064	-114	11,220
1960-61	53,772	+ 282	54,054	54,166	- 394	- 112	11,332
1961-62	60,636	+ 556	61,192	61,352	- 716	- 160	11,492
1962-63	63,036	+ 982	64,018	64,020	- 983	- 1	11,493
1963-64	67,836	+1,332	69,167	69,020	-1,185	+ 147	11,346
1964-65	74,846	+1,166	76,012	76,465	-1,618	- 452	11,799
1965-66	83,564	+ 889	84,453	85,585	-2,021	-1,132	12,931
1966-67	92,676	-1,190	91,486	93,248	- 572	-1,762	14,693
1967-68	100,563	(a)	(a)	102,413	-1,851	(a)	(a)16,544
1968-69	107,846	(b)	(b)	111,540	-3,695	(b)	(b)20,239

(a) Negative adjustment of \$100,000 will be applied in 1969-70.

(b) Adjustment not yet determined but will be taken into account in 1970-71.

Deficit Funding

In the previous table, the original budget result is treated as provisional because the Grant Commission's adjustment is used to amend the original surplus or deficit and also the aggregate deficit. The Tasmanian Government refrains from immediately charging revenue deficits against the Loan Fund since the precise amount of the final deficit is not known until the Commission's adjustment is taken into account two years later. Whilst the aggregate of all deficits at 30 June 1969 was \$20,239,000, the sum of \$14,693,000 has been charged against the loan fund as 'revenue deficits funded': thus the *unfunded* aggregate deficit is only \$5,545,000 carried as a *debit* balance in the accumulated revenue account.

Consolidated Revenue—Receipts

The principal sources of revenue in this fund, in order of importance, are the grants and other financial assistance received from the Commonwealth Government; debt charges received from semi-government authorities in respect of State advances; and State taxation.

The following table shows Tasmanian Consolidated Revenue receipts for a three-year period:

Consolidated Revenue Fund—Receipts
(\$'000)

Item	1966-67	1967-68	1968-69
Commonwealth Grants—			
Financial Agreement	534	534	534
Financial Assistance	34,773	37,968	42,209
Special	20,666	19,889	16,810
Total	55,973	58,391	59,553
Debt Charge Recoveries (a)—			
Interest	15,479	16,835	18,177
Sinking Fund	1,977	2,130	2,287
Total	17,456	18,965	20,464
State Taxation	13,289	15,195	16,804
Lands and Forests—			
Forestry	1,557	1,603	1,598
Other Rents, Sales, etc.	279	369	332
Total	1,836	1,972	1,930
Semi-Government Authorities	246	368	331
Departmental Revenue, Fees, Rents, etc. ..	3,795	5,240	6,100
Victorian Lotteries Agreement	141	138	142
Commonwealth National Welfare Fund	1,106	1,182	1,333
Total Actual Receipts	93,842	101,452	106,656
Transfer, Accumulated Revenue Account (b) ..	—1,166	— 889	+1,190
Grand Total	92,676	100,563	107,846

(a) Mainly on advances made to semi-government bodies.

(b) Special Grant adjustments.

The relative importance of the various components of the Consolidated Revenue Fund can be assessed by expressing them on a per capita basis using the State mean population for the relevant financial year:

Consolidated Revenue Fund—Receipts Per Head of Population
(\$)

Item	1966-67	1967-68	1968-69
Commonwealth Grants	149.7	153.9	154.4
Debt Charge Recoveries	46.7	50.0	53.1
State Taxation	35.5	40.1	43.6
Lands and Forests	4.9	5.2	5.0
Business Undertakings	0.7	1.0	0.9
Departmental Revenue, Fees, Rents, etc. ..	10.1	13.8	15.8
Victorian Lotteries Agreement	0.4	0.4	0.4
Commonwealth National Welfare Fund	3.0	3.1	3.5
Transfer, Accumulated Revenue Account ..	—3.1	—2.3	+3.1
Total	248.0	265.1	279.6

Debt Charge Recoveries

After Commonwealth Grants, debt charge recoveries is the next important item in Consolidated Revenue. The following table shows details of the payments of interest and sinking fund made by various authorities on advances which have been made to them by the State Government; since the advances have been made primarily from State loan borrowings, the Government has accepted an annual liability for debt charges (in respect of these authorities) approximately equal to the recoveries shown.

**Debt Charge Recoveries—Consolidated Revenue Fund
(\$'000)**

Source of Recovery	Interest			Sinking Fund Contributions		
	1966-67	1967-68	1968-69	1966-67	1967-68	1968-69
Transport Commission	1,003	1,050	1,085	159	159	162
Metropolitan Transport Trust ..	131	132	132	19	19	19
Hydro-Electric Commission ..	11,552	12,562	13,649	1,556	1,688	1,817
Regional Water Supplies ..	734	821	913	92	102	118
Government Printing Office ..	22	22	22	3	3	3
King Island Abattoirs ..	17	17	77	3	3	3
Tasmanian Grain Elevators ..	45	43	43	9	9	9
Aluminium Industry Agreement	145	131	131	..	..	..
Closer Settlement	61	64	73	..	..	..
Returned Soldiers Settlement ..	20	19	18	..	..	..
Homes Act Advances	61	53	48	..	..	..
Homes Construction (Housing Department)	829	820	798	135	144	153
State Advances, Primary Producers	185	192	206	..	..	..
Loans to Local Bodies	61	61	63	..	..	..
Tourist Accommodation Loans ..	77	83	80	..	..	..
Loans to Industry	137	198	256	..	..	..
Iron Ore (Savage River) Agree- ment Act	46	170	228	..	..	..
Forestry Commission	257	286	314	..	..	..
Flood Relief Act	8	8	9	..	..	..
Other	88	103	92	..	2	2
Total	15,479	16,835	18,177	1,977	2,130	2,287

State Taxation

In Tasmania, the chief State taxes, in order of importance, are Motor Tax; Stamp Duties (on cheques, legal documents, etc.); Probate and Succession Duties; and Land Tax.

Not all State taxation is paid into the Consolidated Revenue Fund, as shown in the following table:

**State Taxation Collections Paid to Special Funds
(\$'000)**

Particulars	1966-67	1967-68	1968-69
Motor Taxation—			
Retained by Transport Commission	1,094	1,125	1,192
Racing Taxation—			
Paid to Racing Clubs and Racing Commission	442	513	487
Insurance Companies—			
Contributions to Fire Authorities	298	364	661
Total	1,834	2,003	2,340

The following table gives a summary for a three-year period of State taxation taken into Consolidated Revenue:

**State Taxation Collections Paid into Consolidated Revenue
(\$'000)**

Tax or Licence	1966-67	1967-68	1968-69
Probate and Succession Duties	2,149	2,525	3,029
Stamp Duties (a)	3,202	3,675	4,197
Land Tax	2,108	2,271	2,352
Liquor Tax and Licences	887	950	1,072
Racing Taxes	686	807	826
Motor Taxes	4,031	4,860	5,220
Entertainment Tax (b) .. .. .	..	72	73
Other Licences	31	35	35
Total (c)	13,094	15,195	16,804

(a) Excludes: (i) stamp duties on bookmakers' tickets (included in 'Racing Taxes'); (ii) stamp duty on third party insurance (included in 'Motor Taxes').

(b) This tax was re-introduced in 1967-68.

(c) Excluded are the following amounts received from the Victorian Government under the Victorian Lotteries Agreement: 1966-67, \$140,995; 1967-68, \$138,372; 1968-69, \$141,624.

The following summarises total taxation collected by the State:

**Total State Taxation Collections (a)
(\$'000)**

Particulars	1966-67	1967-68	1968-69
Paid into Consolidated Revenue	13,094	15,195	16,804
Paid into Special Funds	r 1,834	r 2,003	2,340
Total	r 14,928	r 17,198	19,143

(a) Taxation is described more fully in a subsequent section, 'Taxation in Tasmania'.

Consolidated Revenue Fund—Expenditure

In the following table, a summary is given of the principal items of Consolidated Revenue Fund expenditure classified according to function:

**Consolidated Revenue Fund—Expenditure by Function (a)
(\$'000)**

Classification by Function	1966-67	1967-68	1968-69
Law, Order and Public Safety—			
Administration of Justice	962	1,087	1,158
Police	3,183	3,618	3,775
Prisons	686	792	824
Custody and Care of Delinquent Children	164	179	187
Fire Brigades	186	257	451
Other	33	25	30
Total	5,216	5,959	6,426
Education—			
Teacher Training	1,354	1,614	1,800
Primary (b)	6,747	7,414	8,143
Secondary	6,633	7,274	8,809
Tertiary—			
Technical	1,047	1,013	1,129
University	1,438	1,637	1,788
Advanced .. .. .	..	400	583
Other (incl. Administration of Education Dept)	3,351	3,764	3,100
Total	20,570	23,118	25,351

Consolidated Revenue Fund—Expenditure by Function (a)—continued
(\$'000)

Classification by Function	1966-67	1967-68	1968-69
Public Health—			
Mental Hospitals	2,007	2,321	2,198
T.B. Sanatoria	313	325	211
Other Hospitals (excl. Repatriation)	6,089	6,305	7,745
Maternal and Infant Health Centres	228	249	270
School Children (incl. Free Milk)	461	619	657
Other	1,439	1,638	1,735
Total	10,537	11,456	12,817
Welfare—			
Child Welfare (incl. Administration)	290	336	393
Relief of Destitute, Aged and Incapacitated	1,642	1,868	2,026
Other (incl. Disaster Relief)	(c) 961	220	266
Total	2,893	2,424	2,685
Development and Conservation of National Resources and Assistance to Industries—			
Agricultural, Pastoral and Dairying	2,709	2,955	3,232
Forestry (incl. Research)	1,500	1,557	1,603
Mines and Minerals	527	611	648
Water Supplies	654	700	850
Fisheries and Game (incl. Research)	71	97	65
Secondary Industries	196	178	161
Land Administration—			
Soldier Settlement	2,306	2,310	2,313
Other	540	629	628
Other	674	831	881
Total	9,179	9,869	10,382
Transport and Communication—			
Railways	2,109	2,271	2,352
Bus Services	975	875	1,030
Roads and Bridges	4,023	4,484	4,670
Other	885	1,265	1,617
Total	7,992	8,895	9,669
Legislature—			
Governor's Establishment	126	126	124
Parliament (incl. Committees)	621	735	783
Other	120	112	181
Total	866	973	1,088
General Administration Services n.e.i.—			
Public Service Administration	229	291	341
Public Works Administration	2,318	2,599	2,839
Other	2,288	3,073	3,273
Total	4,835	5,962	6,452
Regulation of Trade and Industry and Industrial Safety	373	410	461
Housing	214	224	254
Insurance (d)	(e) 53	41	55
Cultural and Recreational—			
Public Libraries, Museums and Art Galleries	718	742	798
Other (incl. Parks, Gardens, Reserves, Sports Grounds)	315	339	332
Total	1,032	1,081	1,131

Consolidated Revenue Fund—Expenditure by Function (a)—continued
(\$'000)

Classification by Function	1966-67	1967-68	1968-69
Services n.e.i.	124	168	167
Debt Services n.e.i. State—			
Interest and Exchange	24,081	26,097	28,141
Sinking Fund and Redemption	3,893	4,163	4,528
Loan Management	251	323	253
Total	28,226	30,583	32,923
Superannuation n.e.i.	989	1,138	1,324
All Other	150	112	356
Total Expenditure	93,248	102,413	111,540

(a) Based on Commonwealth code developed for analysis of government sector accounts.

(b) Includes special schools for handicapped children.

(c) Includes special appropriation of \$750,000 for fire damage relief.

(d) Police Department motor vehicle comprehensive insurance (\$38,000 in 1966-67).

(e) Includes Government contribution of \$15,000 to compulsory hail insurance scheme.

Public Debt Charges

This is the largest item of expenditure but a high proportion is recovered from semi-government authorities. Interest and sinking fund contributions differ from those shown in the previous table: in the table below, interest on repurchased securities is included in sinking fund (but included under Interest and Exchange in the previous table).

Public Debt Charges—Net Burden on Consolidated Revenue
(\$'000)

Particulars	Interest			Sinking Fund Contribution		
	1966-67	1967-68	1968-69	1966-67	1967-68	1968-69
Public Debt Charges—						
Expenditure, Consolidated Revenue	(a) 24,320	(a) 26,408	(a) 28,383	(b) 3,904	(b) 4,175	(b) 4,512
Recovered from Semi-Government Bodies, etc.	15,479	16,835	18,177	1,977	2,130	2,287
Net Burden on Consolidated Revenue (c)	8,841	9,573	10,206	1,927	2,045	2,225

(a) Includes loan management charges.

(b) Contribution payable under the Financial Agreement to the National Debt Sinking Fund.

(c) In respect of non-revenue producing assets such as schools, roads, etc.

Business Undertakings

Unlike the Consolidated Revenue Funds of some Australian States, the Tasmanian Fund excludes the gross receipts and expenditure of State business undertakings such as railways, bus services, water supply, etc. The principal charges in 1968-69 under this item were incurred in respect of the Transport Commission and consisted of: (i) reimbursement of net loss 1968-69, (\$1,223,555); and (ii) proceeds of State Land Tax paid to Commission (\$2,351,943). Another major item was a contribution of \$1,030,000 to the Metropolitan Transport Trust which experienced a net trading loss of \$980,468 in 1968-69.

Roads and Bridges

The chief expenditure under this item in 1968-69 was a transfer of \$4,587,233 to the State Highway Trust Fund, such sum representing revenue received from motor tax, vehicle registrations, drivers' licences and public vehicle fees and charges, *less* \$1,192,018 retained by the Transport Commission to meet the cost of vehicle registration and traffic control.

State Trust and Special Funds

Revenues of the State are payable to Consolidated Revenue with the exception of certain revenues which have been set aside by various Acts of Parliament for specific purposes and which are payable into special funds or accounts at the State Treasury. The volume of these transactions is high, \$117,723,054 being received in 1968-69, \$117,356,488 being expended and the balance in the funds changing from \$7,085,031 (1 July 1968) to \$7,451,598 (30 June 1969).

It should be noted that many accounts in the Trust and Special Funds indicate Treasury transactions which are merely supplementary to those recorded under Consolidated Revenue and Loan Funds; the following examples are given:

State Trust and Special Funds—Selected Accounts, 1968-69
('\$000)

Account	Receipts	Expenditure
Commonwealth Tax Deductions Suspense Account (a) ..	6,845.1	6,845.1
Pay-roll Tax Suspense (b)	1,092.1	1,092.1
Hydro-Electric Commission Suspense Account (c) ..	896.2	830.7

- (a) Wages and salaries included under Consolidated Revenue and Loan Fund expenditure are shown at gross value; however, the deductions applicable to wage and salary earners on Government pay-rolls are passed, via this account, to the Commonwealth.
- (b) Expenditure under Consolidated Revenue and Loan Fund includes pay-roll tax; however, pay-roll tax applicable to Government pay-rolls is passed, via this account, to the Commonwealth.
- (c) The Treasury acts as agent for meeting overseas liabilities incurred by the Hydro-Electric Commission; these liabilities, mainly incurred in the acquisition of plant and equipment, are largely accounted for in Loan Fund expenditure.

Many accounts are concerned with Government activities financed by the Commonwealth, the State acting as trustee or agent in the transactions; examples are as follows:

State Trust and Special Funds—Selected Accounts, 1968-69
('\$000)

Account	Receipts	Expenditure
Tasmanian University (Commonwealth Grants) Account (a)	1,282.6	1,282.6
Commonwealth Free Milk Scheme Account (b)	421.4	482.9
Home Builders Fund (c)	3,778.4	3,715.1

- (a) Treasury passes Commonwealth grants to University of Tasmania.
- (b) Education Department administers free milk scheme for school children on behalf of Commonwealth.
- (c) Agricultural Bank administers loans to home builders, the source of funds being the Commonwealth.

In the case of some accounts, there is provision for crediting the Trust and Special Funds with contributions from Consolidated Revenue, an important example being the State Highways Trust Fund:

State Trust and Special Funds—State Highways Trust Fund, 1968-69
('\$000)

Item	Receipts	Expenditure
Commonwealth Contribution	8,500.0	..
Grant from Consolidated Revenue	4,587.2	..
Roads, Bridges, Jetties and Ferries	143.2	12,796.5
Self-Balancing Entries (Contra)	921.3	921.3
Fund Entries	14,151.8	13,717.8

The Forestry Fund Account records transactions under legislation requiring revenue from forestry to be paid to Consolidated Revenue, and for Consolidated Revenue to expend an equal amount on forestry in the following year:

State Trust and Special Funds—Forestry Fund Account, 1968-69
('\$000)

Item	Receipts	Expenditure
Grant from Consolidated Revenue (a)	1,602.5	..
Expenditure on Forestry .. .. .	..	1,516.0
Self-Balancing Entries (Contra)	410.6	410.6
Fund Entries	2,013.1	1,926.6

(a) Consolidated Revenue recorded Forestry receipts of \$1,602,518 in 1967-68; this sum therefore became the 1968-69 contribution from Consolidated Revenue.

Some of the funds held in trust are not owned by the State Government, e.g. St John's Park Inmates Trust Account. Other funds are held on behalf of semi-government authorities; e.g. Agricultural Bank.

State Loan Fund

The *Public Account Act* 1962 has, *inter alia*, the following provisions relating to the Loan Fund: (i) the Governor, on Treasury advice, may make transfers between block votes as long as the total authorised amount is not exceeded; (ii) a sum of up to \$400,000 may be spent for purposes not previously authorised; (iii) for purposes previously authorised, an additional sum of up to \$1,000,000 may be spent; (iv) in instances of expenditure outside the provisions of a specific Loan Fund Appropriation Act, the ratification of such action is to be sought from Parliament before the close of the following financial year. The Act also provides that the unexpended balances of votes at the close of the financial year lapse (in contrast with previous practice when such balances were carried forward from year to year).

Expenditure from the Loan Fund is devoted to two main purposes: (i) the making of advances to State semi-government authorities; (ii) the carrying out of the State's own works programme. Such funds, whether lent to other authorities for their works programmes or spent directly by the State, result in the creation of new capital assets, a large proportion of which are revenue earning and therefore capable of reimbursing the State for the debt charges which it has incurred. (The previous section on Consolidated Revenue Expenditure shows the *gross* and *net* expenditure on annual debt charges.)

In addition to money from loan raisings, the Loan Fund records other receipts such as repayment of advances and Commonwealth capital grants; it is usual, therefore, to record loan expenditure on both gross and net bases. The annual net loan expenditure is, in effect, the disbursement of the new borrowings for the year, augmented or diminished by the net movement in the

Loan Fund balance. The following table shows the calculation of net loan expenditure from two viewpoints: (i) as a residue from gross loan expenditure; (ii) as the algebraic sum of new loan raisings for new capital purposes and the net movement in the Loan Fund balance:

State Loan Fund—Calculation of Net Loan Expenditure
(\$'000)

Particulars	1966-67	1967-68	1968-69
(i) Gross Loan Expenditure	40,161	46,054	44,458
Less Repayments	1,837	2,334	2,341
Less Commonwealth Grants	1,689	1,591	1,956
Net Loan Expenditure	36,636	42,128	40,164
(ii) Borrowings for New Capital Purposes	37,622	40,651	(a) 42,141
Decrease, Loan Fund Balance	-988	1,458	-2,070
Other (b)	2	19	93
Net Loan Expenditure	36,636	42,128	40,164

(a) Includes discount (\$21,000); net amount borrowed for new capital purposes was \$42,120,000.

(b) Discount and capital appreciation items.

The following table shows gross and net loan expenditure annually:

Loan Fund—Gross and Net Loan Expenditure
(\$'000)

Year	Loan Expenditure		Year	Loan Expenditure	
	Gross	Net		Gross	Net
1951-52	34,048	30,298	1960-61	33,866	30,612
1952-53	40,152	26,136	1961-62	32,520	30,088
1953-54	31,816	27,544	1962-63	33,332	30,510
1954-55	35,310	29,378	1963-64	35,354	32,905
1955-56	35,212	27,048	1964-65	35,816	33,352
1956-57	23,544	22,038	1965-66	39,411	36,573
1957-58	23,390	21,666	1966-67	40,161	36,636
1958-59	27,610	25,112	1967-68	46,054	42,128
1959-60	29,130	26,442	1968-69	44,458	40,164

In the remainder of this section, tables will deal with *net* loan expenditure only since this is directly related to aggregate net loan expenditure and to the State Public Debt.

The following table shows loan fund expenditure classified according to function:

Loan Fund Expenditure Classified by Function (a)
(\$'000)

Function	1966-67	1967-68	1968-69
Part 1: Net Payments by Function (b)—			
Law, Order and Public Safety—			
Police	194	688	499
Prisons	5	35	48
Other	481	431	450
Total	680	1,154	996

Loan Fund Expenditure Classified by Function (a)—continued
(\\$'000)

Function	1966-67	1967-68	1968-69
Education—			
Primary	867	1,268	1,493
Secondary	936	1,224	1,093
Tertiary—			
Technical (incl. Advanced)	243	290	— 81
University	1,121	295	592
Other	894	1,029	1,280
Total	4,061	4,106	4,377
Public Health—			
Mental and Other Hospitals (excl. Repatriation) ..	3,195	3,547	4,753
Ambulances	4	68	43
Other	217	331	257
Total	3,417	3,946	5,053
Welfare	263	87	29
Development and Conservation of National Resources and Assistance to Industries—			
Agricultural, Pastoral and Dairying	329	368	821
Forestry (incl. Research)	1,563	1,179	1,512
Mines and Minerals	1,370	2,381	— 238
Fisheries and Game (incl. Research)	72	52	199
Water Supplies	1,513	2,547	1,247
Secondary Industries	1,513	964	743
Land Administration	63	150	41
Other	301	53	— 19
Total	6,725	7,694	4,305
Transport and Communication—			
Roads and Bridges	1,678	1,142	756
Other	298	761	252
Total	1,975	1,903	1,008
Electricity (Advances to the H.E.C.)	18,000	20,000	20,725
Public Works Administration n.e.i.	1,475	2,451	2,085
Housing	— 297	— 476	— 397
Cultural and Recreational	48	207	243
Debt services n.e.i. (State)—			
Sinking Fund and Redemption (incl. Conversion)	41,163	55,713	37,117
Loan Management	— 109	— 95	— 98
Total	41,054	55,619	37,019
Other	336	1,091	1,725
Part 2: Total Repayments to Loan Fund	3,526	3,925	4,294
Total Payments from Loan Fund	81,281	101,706	81,461

(a) Based on Commonwealth code developed for analysis of government sector accounts.

(b) The repayments shown in total in Part 2 have been offset against individual items in Part 1 to obtain net payments by individual Function.

The item 'Total Repayments to Loan Fund' in the preceding table includes grants received from the Commonwealth and credited to Loan Fund (the total amount in 1968-69 was \$1,952,000). Principal Commonwealth Grants

received into the Loan Fund in 1968-69 were: (i) university financial assistance grants, \$890,000; (ii) mental health institution grant, \$387,000; (iii) grants for technical training, \$275,000. Principal repayments to Loan Fund from State sources in 1968-69 were: (i) recovery of rural advances under the State Advances Act 1935, \$414,000; (ii) repayments by the Transport Commission, \$322,000; (iii) repayments from the Housing Department under the *Homes Act* 1935, \$319,000; (iv) repayments under the *Industrial Development Act* 1954, \$232,000.

The following table shows how a reconciliation may be obtained between total loan fund payments in the previous table and net loan fund expenditure:

Net Loan Fund Expenditure
(*\$'000*)

Particulars	1966-67	1967-68	1968-69
Total Payments from Loan Fund	81,281	101,706	81,461
Debt Service Transactions (a)—			
Conversion (Australia)	—37,688	—44,003	—27,576
Conversion (State Savings Bank Agreement) ..	—960	—960	—960
Redemption from New Cash Borrowing	—2,516	—10,750	—8,581
Loan Fund Expenditure for New Capital Purposes (b)	40,118	45,993	44,344
Discount Allowed on New Borrowings (a)	44	61	(c) 114
Gross Loan Fund Expenditure (b)	40,161	46,054	44,458
Total Repayments to Loan Fund (a)	—3,526	—3,925	—4,294
Net Loan Fund Expenditure (b)	36,636	42,128	40,164

(a) See Note (b).

(b) As specified in Treasurer's Statement; items marked (a) are needed to make a reconciliation with total payments from Loan Fund.

(c) Includes \$90,427 capital appreciation (premiums) on redemption and conversion of Special Bonds.

The relationship between aggregate net loan expenditure, total loans raised and the State Public Debt is established in the following table:

Aggregate Net Loan Expenditure and State Public Debt (a) at 30 June
(*\$'000*)

Particulars	1967	1968	1969
Aggregate Net Loan Expenditure	592,064	634,192	674,580
Unexpended Balance, Loan Fund	2,743	1,285	3,354
Grand Total Loans Raised	594,806	635,477	677,935
Less Aggregate Redemptions From Sinking Funds ..	60,893	65,892	69,507
Less Liability for Exchange on Overseas Redemption	8,996	8,692	8,692
State Public Debt (a)	524,918	560,893	599,736

(a) Overseas component at exchange rates prevailing on 1 July 1927.

State Public Debt

The State Public Debt is calculated on two bases: (i) With overseas debt calculated at 'mint par of exchange', i.e. at the exchange rates prevailing on 1 July 1927. 'Mint par debt' is the official debt for the purpose of determining

sinking fund contributions payable under the Financial Agreement, 1927; and (ii) With overseas debt calculated at current rates of exchange. The following table shows the State Public Debt calculated on both bases:

State Public Debt at 30 June 1969—At Mint Par of Exchange and at Current Rates of Exchange

Place in Which Debt Repayable	\$Aust. at Mint Par of Exchange		\$Aust. at Current Rates of Exchange	
	Conversion Rate of \$A (a)	Debt (\$'000)	Conversion Rate of \$A (b)	Debt (\$'000)
Australia .. ..	..	586,078	..	586,078
London	£0.5 sterling	8,082	£0.46667 sterling	8,659
New York	U.S. \$2.43325	4,549	U.S. \$1.1200	9,884
Canada	C. \$2.43325	387	C. \$1.2108	778
Switzerland ..	S. Francs 12.61965	293	S. Francs 4.8978	756
Netherlands ..	Guilders 6.053925	346	Guilders 4.0544	516
Total ..	..	599,736	..	606,671

(a) Exchange rates at 1 July 1927 (rate for £A 0.5).

(b) Exchange rates at 30 June 1969 for \$A.

The most significant changes between the 1927 rates of exchange and those current today occurred in three stages: (i) 1930, when the Australian pound was devalued 20 per cent in relation to sterling; (ii) 1949, when the Australian pound was devalued by 30.5 per cent parallel to a similar devaluation in sterling; (iii) 1967, when the pound sterling was devalued 14.3 per cent (but the decision was taken not to similarly devalue the \$A).

The growth of the public debt, expressed at mint par of exchange, is shown in the following table:

State Public Debt—Place of Flotation and Nominal Interest Payable (\$'000)

At 30 June	Debt Redeemable In—						Total Debt	Nominal Interest (a)
	London	New York	Switzerland	Canada	Netherlands	Australia		
1959	14,732	1,918	..	..	..	291,000	307,650	12,540
1960	14,682	2,482	..	..	..	313,880	331,044	13,806
1961	14,662	3,056	293	505	..	336,042	354,559	15,362
1962	14,652	3,572	293	505	399	359,830	379,252	16,658
1963	16,092	4,846	293	505	399	382,458	404,594	18,012
1964	17,724	4,684	293	486	399	408,724	432,311	19,259
1965	17,544	4,430	293	473	399	439,163	462,302	21,707
1966	13,733	5,743	293	444	399	471,045	491,658	23,987
1967	13,643	5,284	293	419	399	504,880	524,918	25,940
1968	8,382	4,913	293	393	372	546,539	560,893	27,778
1969	8,081	4,549	293	387	346	586,078	599,736	30,040

(a) Interest has been calculated on the face value of individual loans outstanding at 30 June; no allowance has been made for variations in exchange rates since 1 July 1927.

A notable feature of the public debt of the State is that approximately 98 per cent of indebtedness (at 'mint par of exchange' rates) is now domiciled in Australia. There has been a gradual change from the situation which

existed a century ago when nearly all loans were financed in London. In 1870, the State's public debt (\$2,537,400) was wholly redeemable in London and even in 1900, less than 10 per cent of the State debt was redeemable in Australia.

Public Debt Transactions

The following table shows particulars of loans raised and redeemed annually during the most recent three-year period (expressed at mint par of exchange) and also the transactions for the current year expressed at current rates of exchange. It will be observed that redemption of loans falling due in any particular year is achieved, in the main, by conversion (i.e. by renewal of the original loans on new terms and conditions):

State Public Debt—Conversion and Redemption
(£'000)

Particulars	At Mint Par of Exchange			At Current Rates
	1966-67	1967-68	1968-69	1968-69
Loans Raised—				
For Additional Borrowings	37,694	40,651	42,141	42,141
For Conversion Purposes	38,648	44,963	28,536	28,536
For Redemption, Maturing Loans ..	2,517	12,772	8,584	8,584
Total Raisings	78,858	98,387	79,261	79,261
Deduct—				
Loans Redeemed—				
By Conversion	38,648	44,963	28,536	28,536
From New Cash Raisings	2,299	12,372	8,491	8,491
From National Debt Sinking Fund ..	4,652	5,076	3,391	3,859
Net Increase in Public Debt ..	33,260	35,975	38,843	38,375
Debt at End of Year ..	524,918	560,893	599,736	606,671

The following table shows the due dates of loans outstanding *at current exchange rates* (i.e. at the rates prevailing at 30 June 1969) and also the country in which the loans will fall due.

Due Dates of Loans at 30 June 1969
(£'000)

Maturing During—	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1969-70	57,389	1,077	..	..	58,466
1970-71	61,614	..	232	..	61,847
1971-72	35,598	..	366	..	35,964
1972-73	29,958	..	838	..	30,796
1973-74	19,582	..	..	..	19,582
1974-75	26,257	1,942	..	..	28,200
1975-76	34,173	180	..	756	35,109
1976-77	20,205	..	..	..	20,205
1977-78	25,478	1,532	..	..	27,010
1978-79 to 1981-82	53,045	3,759	3,201	1,294	61,299
1982-83 to 1985-86	91,089	169	5,247	..	96,506
1986-87 to 1989-90	90,859	..	..	..	90,859
1990-91 to 2003-04	40,830	..	..	..	40,830
Total ..	586,078	8,659	9,884	2,051	606,671

The following table shows the rates of interest which were payable on the State Debt and the portions of the debt at each rate in Australia, London, New York and elsewhere overseas respectively (*at current exchange rates*):

Rates of Interest on Public Debt at 30 June 1969
(*\$'000*)

Rate of Interest (Per Cent)	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1.00	493	..	..	..	493
3.25 .. ..	..	3,019	..	..	3,019
4.125	13,440	..	..	..	13,440
4.1875	1,812	..	..	..	1,812
4.25	25,021	..	..	..	25,021
4.3125	850	..	..	..	850
4.40	3,057	..	..	..	3,057
4.4375	2,092	..	..	..	2,092
4.50	49,140	..	232	756	50,128
4.60	3,058	..	..	..	3,058
4.625	2,954	..	..	..	2,954
4.75	44,123	..	838	..	44,961
4.80	23,911	..	..	..	23,911
4.90	11,162	..	..	..	11,162
5.00	227,545	..	1,035	516	229,096
5.20	5,081	..	..	..	5,081
5.25	126,740	..	1,642	..	128,382
5.30	2,791	..	..	..	2,791
5.375	17,362	..	..	..	17,362
5.40	25,447	..	..	..	25,447
5.50 .. ..	..	5,291	3,023	..	8,314
5.75 .. ..	..	..	3,114	778	3,892
6.00 .. ..	..	349	..	..	349
Total ..	586,078	8,659	9,884	2,051	606,671

The next table summarises the transactions of the National Debt Commission in relation to the Tasmanian Public Debt:

National Debt Commission—Transactions in Respect of Tasmanian Public Debt
(*\$'000*)

Particulars	1966-67	1967-68	1968-69
Balance at Beginning of Period	159	348	81
Contributions—			
From Commonwealth Government	1,293	1,398	1,485
From State Government	3,892	4,162	4,523
Interest Received (Net)	2	12	—12
Funds Available	5,347	5,921	6,078
Deduct			
Redemptions and Re-Purchases (a)—			
At Mint Par of Exchange	4,652	5,076	3,391
Exchange Adjustment	347	764	333
Balance at End of Period	348	81	2,354

(a) The sum of the two specified items represents the cost at current rates of exchange.

The National Debt Commission was established as part of the 1927 Financial Agreement and its function is to administer one consolidated sinking fund in respect of the debt of the Commonwealth and States. Sinking fund

moneys are used to redeem unconverted securities at maturity, and to repurchase securities on the stock market. The obligations of the States and the Commonwealth in contributing to the consolidated sinking fund are set out earlier in this chapter in a section headed 'Payments under the Financial Agreement (1927)'; although the Commission operates a consolidated fund, it is possible to obtain statements for its operations with respect to each State's public debt.

Taxation in Tasmania

Introduction

As citizens of the Commonwealth, Tasmanians are subject to taxes levied both by the State and the Commonwealth. The relative magnitude and severity of the two forms of taxation are compared in the following table:

Taxation, State of Tasmania and Commonwealth, 1968-69 (a)

Tax	Amount (\$'000)		Per Head of Population (\$) (d)	
	Tasmania (b)	Commonwealth (c)	Tasmania	Commonwealth
Income .. .. .	..	3,416,709	..	280.70
Customs and Excise .. .. .	..	1,248,614	..	102.58
Sales .. .. .	..	494,114	..	40.60
Pay-Roll .. .. .	..	205,568	..	16.89
Probate and Succession Duties ..	3,029	60,726	7.85	4.99
Motor	6,412	..	16.62	..
Stamp Duties	4,197	..	10.88	..
Land	2,352	..	6.10	..
Racing	1,313	..	3.40	..
Liquor	1,072	..	2.78	..
Contributions by Insurance Companies to Fire Authorities ..	661	..	1.71	..
Entertainment	73	..	0.19	..
All Other	35	59,929	0.09	4.92
Total	19,143	5,485,660	49.63	450.69

(a) Collections from all sources of taxation, including amounts paid to special funds.

(b) State taxation collected by Tasmanian Government.

(c) Commonwealth Government taxation for Australia.

(d) Based on respective *mean* populations.

Assuming that Tasmanians contributed to Commonwealth taxation in strict proportion to the relative mean populations of the State and the Commonwealth, it would be theoretically correct to add the two per capita figures (\$49.63 and \$450.69) and arrive at a figure of \$500.32 as the total per capita taxation of the Tasmanian and Commonwealth Governments within the State. An alternative way of examining the problem is to refer to total Commonwealth taxes collected in Tasmania but this measure is unsatisfactory for a number of reasons, the chief defects being:

- (i) Until 30 June 1970, Commonwealth income tax and estate duty were recorded not only in the six States but also in a *Central Office* collecting from individuals and companies with specified interstate income or assets. Central Office collections of income tax amounted to approximately one-third of the Australian total and, to this extent, reduced the collections credited to the six States. These Central Office collections ceased at 30 June 1970 and for the income years after 1969-70, all assessments will be

handled in State Offices of the Taxation Department. Even after this change, income tax *collected in Tasmania* will not directly relate to income *earned in Tasmania*, since a company with branches in Tasmania but with head-office in Melbourne may make its return to the Victorian Taxation Office.

- (ii) Goods shipped to Tasmania will, in some cases, already have been taxed in another State in respect of customs, excise or sales taxes. Even though other States are credited with the collection of these three taxes, the fact remains that Tasmanians bear their incidence in the form of increased commodity prices. The amount of tax collected in other Australian States on goods shipped to Tasmania is not known.

Estimated Incidence

The following table shows actual collections of Commonwealth taxes in the State and also the estimated incidence of taxes collected elsewhere in Australia:

**Taxation—Collected by Commonwealth in Tasmania and Elsewhere and
Estimated Incidence in Tasmania
(\$'000)**

Tax	1966-67	1967-68	1968-69
Collected in Tasmania—			
Income Tax (a)	61,070	r 65,628	71,619
Estate Duty (a)	519	802	1,458
Wool Tax	378	278	374
Export Charges	119	142	174
Pay-roll Tax	4,897	5,176	5,556
Gift Duty	116	113	200
Stevedoring Industry Charge	503	840	963
Butter Fat Levy	136	136	157
Other Levies	71	69	78
Sales Tax	9,962	10,762	13,025
Customs	3,041	r 3,230	2,686
Excise	20,987	21,980	23,141
Other .. .. .	..	14	25
Total Collected in Tasmania	101,801	r 109,169	119,457
Collected Elsewhere in Australia (b)—			
Sales Tax	1,464	1,698	1,693
Customs	5,218	6,105	7,628
Excise	3,223	3,593	3,736
Estimated Incidence (a)	111,707	r 120,565	132,514

(a) Excludes Central Office collections.

(b) Estimated; goods on which these taxes were paid are assumed to have been sold in Tasmania.

In estimating the collection, in other Australian States, of the main taxes affecting Tasmanians, account was taken of the latest retail sales figures which show Tasmanian *per head* sales to be 94 per cent of the corresponding Australian figure. Accordingly the *per head* incidence of customs, excise and sales taxes in Tasmania was taken to be 94 per cent of the Australian *per head* collection figure for each tax. It will be apparent that the estimated incidence still falls far short of a realistic figure due to the unknown Tasmanian contribution to Central Office collections of income tax and estate duty.

Commonwealth Income Tax

Income tax, the most important revenue raising levy in the Commonwealth was introduced into Australia in 1884 by the colony of South Australia. In course of time this form of taxation was adopted by all the Australian governments between 1884 and 1915. From 1915 to 1942 the State and Commonwealth governments imposed taxation concurrently.

Uniform taxation on incomes throughout Australia was adopted in 1942 when the Commonwealth Government became the sole authority levying this tax.

With the introduction of Social Services Contribution from 1 July 1946, the levy of taxation on the incomes of individuals was divided into two separate taxes: (i) Income Tax; (ii) Social Services Contribution. Both taxes were based upon the same definitions of assessable income and both were assessed and collected concurrently. Company income was not subject to Social Services Contribution except with regard to the undistributed income of private companies. The two taxes were later merged into a single levy known as 'Income Tax and Social Services Contribution' and this title referred to the tax imposed on the incomes of both individuals and companies. It first applied to the tax imposed on incomes derived by individuals during the year ended 30 June 1951, and by companies during the year ended 30 June 1950. The term now in use is simply 'Income Tax'.

Certain types of income are exempt from tax in Australia. These include income from gold and uranium mining; war, invalid, age and widows' pensions; child endowment; and unemployment and sickness benefits.

Expenses incurred in earning income and losses incurred in previous years are allowable deductions in calculating taxable income.

For the income year 1969-70, Income Tax was payable on the incomes of individuals and commenced at a taxable income of \$417. However, certain limitations applied to the tax payable by aged persons, over 65 years of age in the case of a male and over 60 years in the case of a female. Concessional deductions were allowed to taxpayers on account of dependants, certain medical and dental expenses, life insurance premiums (up to \$1,200), contributions paid to superannuation and medical or hospital benefit funds, education expenses (up to \$300 per dependant), etc. and were subtracted from income to calculate taxable income. Dependants included spouse, parents, parents-in-law, children under sixteen years of age, student children under 21 years of age, invalid child, brother or sister over 16 years of age, or daughter-housekeeper for widow or widower. A concessional deduction might be allowed for a housekeeper having the care of children under 16 years of age or of an invalid relative where the taxpayer did not contribute to the maintenance of a spouse or daughter-housekeeper. The amount of concessional deduction allowable in respect of each type of dependant and housekeeper was

spouse, \$312; parent or parent-in-law, \$312; children under 16 years: one child, \$208, other children, \$156; student child, 16 to 21 years, \$208 each; invalid relative not less than 16 years, \$208 each; housekeeper or daughter-housekeeper, \$312.

From 1954-55 to 1969-70 there were few variations in the rates of income tax on individuals, the chief change relating to a general five per cent rebate of tax operative in the years 1959-60, 1961-62, 1962-63 and 1963-64. For the year 1964-65, the rebate was withdrawn and from 1965-66 a 2½ per cent levy was added. The other major change was the lift in the minimum taxable income

from the previous \$210 to \$417 in 1963-64. In general then, the rates of income tax for the 1969-70 income year are those for 1954-55 increased by only 2½ per cent. The yield from income tax in this period has shown steep annual increases, not because of rate variations, but because taxable incomes have been rising and the number of taxpayers has shown some increase.

The following table shows the rates of Income Tax for individuals for the income year 1969-70:

Australia—Rates of Income Tax for Individuals, Income Year 1969-70

(\$)

Selected Total Taxable Income			Tax Payable	Selected Total Taxable Income			Tax Payable
417	..	..	0.51	3,200	..	..	518.34
500	..	..	9.63	3,400	..	..	579.02
600	..	..	15.88	3,600	..	..	639.70
700	..	..	24.29	3,800	..	..	705.50
800	..	..	32.69	4,000	..	..	771.31
1,000	..	..	54.83	4,800	..	..	1,061.59
1,200	..	..	80.46	5,600	..	..	1,375.65
1,400	..	..	109.57	6,400	..	..	1,713.49
1,600	..	..	142.16	7,200	..	..	2,072.65
1,800	..	..	178.24	8,000	..	..	2,452.31
2,000	..	..	217.81	8,800	..	..	2,851.65
2,200	..	..	262.09	10,000	..	..	3,487.56
2,400	..	..	306.37	12,000	..	..	4,615.06
2,600	..	..	356.80	16,000	..	..	6,988.96
2,800	..	..	407.23	20,000	..	..	9,465.36
3,000	..	..	462.78	32,000 (a)	..	..	17,251.26

(a) Income in excess of \$32,000 was taxed at the rate of 68.37 cents for each dollar of excess.

The 1970-71 budget introduced a major revision to income tax rates applied to individuals; reductions of 10 per cent in income tax payable will apply on taxable incomes up to \$10,000, on taxable incomes from \$10,000 to \$20,000 the reduction in tax will taper off to 4.4 per cent and cut out on taxable incomes of \$32,000. The new rates of taxation will apply for the 1970-71 income year; the new scale of tax instalment deductions (pay as you earn) became effective from 1 October 1970.

A system operates whereby the majority of taxpayers have regular deductions made from their salaries or wages, i.e. the 'pay-as-you-earn' principle. The amounts deducted are regulated so that the employee will have paid the approximate amount of his taxation by the end of the income year when he makes a return in which he may claim the refund of any overpayment of taxation instalments.

The following table shows the number of taxpayers, taxable income and Income Tax assessed during the year 1968-69 (Income Year: 1967-68).

The following definitions apply to the table:

- (i) Actual Income: Gross income *including exempt income* less expenses incurred in earning that income.
- (ii) Individuals: *Excluding companies*. Residents assessed both in Tasmania and at Central Office, also non-residents assessed in Tasmania.
- (iii) Taxable Income: Actual income *less* exempt income and *less* allowable deductions.

Tasmania, Income Tax—Income Year 1967-68
Individuals—Residents and Non-Residents

Grade of Actual Income	Taxpayers	Taxable Income			Net Income Tax Assessed
		Salaries and Wages	Other	Total	
\$	no.	\$'000	\$'000	\$'000	\$'000
417- 599 ..	4,689	2,003	298	2,301	45
600- 799 ..	5,320	2,928	510	3,438	109
800- 999 ..	5,875	4,126	659	4,785	210
1,000- 1,199 ..	7,056	6,010	904	6,914	383
1,200- 1,399 ..	6,986	6,936	1,128	8,063	530
1,400- 1,599 ..	7,335	8,240	1,477	9,717	735
1,600- 1,799 ..	7,858	10,106	1,614	11,720	997
1,800- 1,999 ..	7,804	10,913	1,899	12,812	1,196
2,000- 2,199 ..	7,694	11,401	2,042	13,443	1,340
2,200- 2,399 ..	8,184	13,087	2,082	15,168	1,600
2,400- 2,599 ..	8,345	13,910	2,186	16,096	1,768
2,600- 2,799 ..	8,731	15,761	2,266	18,028	2,095
2,800- 2,999 ..	8,627	16,512	2,361	18,874	2,292
3,000- 3,999 ..	29,948	65,260	11,145	76,405	10,571
4,000- 5,999 ..	19,155	53,297	14,432	67,729	12,106
6,000- 7,999 ..	4,223	14,106	8,003	22,109	5,183
8,000- 9,999 ..	1,436	5,264	4,857	10,121	2,860
10,000-19,999 ..	1,409	4,862	10,392	15,254	5,526
20,000-29,999 ..	144	618	2,377	2,996	1,436
30,000 and over ..	41	153	1,823	1,976	1,157
Total ..	150,860	265,493	72,455	337,948	52,139

Companies (Income Tax)

The tax payable by companies for the financial year 1969-70 is based on income derived during the year ended 30 June 1969 or substituted accounting period. (In the case of tax on individuals, financial year and income year are usually synonymous.)

The following table shows the rates of tax and contribution payable by companies for the 1969-70 financial year:

Rates of Income Tax Contribution
Companies—Financial Year 1969-70

Scale			Taxable Income	
			Up to \$10,000	Balance
			cents per \$	cents per \$
A	..	..	30.0	40.0
B	..	..	35.0	45.0
C	..	..	40.0	45.0
D	..	..	35.0	35.0

The following shows the application of the above scales to the various types of company:

Private: (A) except that 50 cents in the \$ was payable on the undistributed amount.

Co-operative: (B).

Life Assurance: If purely mutual (A). Other Life Assurance (if resident) mutual income (A); other income (C) except that maximum other income subject to 40.0 cent rate is \$10,000 less mutual

income; if non-resident, mutual income (A), dividend income (B), other income (C) except that maximum dividend income subject to 35.0 cent rate is \$10,000 less mutual income, and maximum other income subject to 40.0 cent rate is \$10,000 less the sum of dividend and mutual income.

Non-Profit: Friendly Society Dispensary (D); other (B).

Other Companies: Resident (C); non-resident—dividend income (B), other income (C) except that maximum other income subject to 40.0 cent rate is \$10,000 less dividend income.

State Taxation

In the section on Consolidated Revenue, taxes collected by the Tasmanian Government were shown in summarised form.

The next table gives full details of State Taxation. It should be noted that certain taxes are reserved for special purposes. Examples are: (i) Land Tax—although this item is recorded as a Consolidated Revenue receipt, it was passed to the Transport Commission; however, this practice was discontinued in 1969-70; (ii) Motor Taxation—the component specified as 'for Consolidated Revenue' is passed to the State Highway Trust Fund; (iii) Racing and Gaming Taxes—part of the 'paid to special funds' item is passed to the racing clubs and the remainder spent on administration of racing.

State Taxation Collections (a)
(\$'000)

Tax	1966-67	1967-68	1968-69
Deceased Persons' Estates Duties	2,149	2,525	3,029
Entertainments Tax .. .. .	..	72	73
Stamp Duties (excluding Bookmakers' Tickets)—			
Cheques	568	581	611
Bills of Exchange and Lading	2	2	3
Hire-Purchase Agreements	471	484	483
Legal Documents, etc.	1,090	1,247	1,325
Adhesive Revenue Stamps	447	566	644
Insurances	625	746	936
Marketable Securities .. .. .	..	49	80
Receipts Duty .. .. .	..	..	115
Racing and Gaming Taxes—			
Paid to Consolidated Revenue	685	807	826
Paid to Special Funds	442	513	487
Land Tax	2,108	2,271	2,352
Motor Taxation—			
Paid to Consolidated Revenue	4,031	4,860	5,220
Paid to Special Funds	1,094	1,126	1,192
Tax paid to Fire Authorities (b)	298	364	661
Liquor Tax and Related Licences—			
Tax	749	830	944
Publicans' Licences, etc.	39	23	25
Wholesale Licences	95	93	98
Registration of Clubs	4	4	5
Sundry Licences—			
Animals' and Birds' Protection Act	20	23	22
Auctioneers and Estate Agents	7	7	8
Other (including Firearms Act)	5	5	4
Total	14,928	17,198	19,143

(a) Collections from all sources of taxation, including amounts paid to special funds.

(b) Paid by insurance companies to the Fire Brigades Commission and, from 1 July 1968, to the Rural Fires Board as well.

State Land Tax

The rates of land tax assessed on urban unimproved land values for the year 1968-69 are shown in the following table:

Rates of State Land Tax—Urban Land, 1968-69
(**\$**)

Taxable Value (Selected Values) (a)			Tax Payable	Taxable Value (Selected Values) (a)			Tax Payable
500	..	..	1	15,000			105
1,000	..	..	2	25,000			225
2,000	..	..	5	50,000			575
4,000	..	..	13	100,000			1,575
6,000	..	..	23	150,000			2,825
10,000	..	..	55	200,000			4,235

(a) Tax on unspecified values may be calculated by simple proportion, e.g. tax on \$5,750 equals \$13 *plus* $1,750/2,000$ (\$23 *less* \$13) i.e. \$21.75. Land values exceeding \$150,000 were further taxed at 3 cents in the \$ on the excess.

The rates of land tax assessed on rural land values for the year 1968-69 are shown in the following table:

Rates of State Land Tax—Rural Land, 1968-69

Unimproved Value (\$)	Taxable Value	Tax Rate
1-10,000	Nil	Nil
10,001-15,000	Three times the unimproved value less \$30,000	As for Urban land
15,001 and over	Unimproved value	As for Urban land

The following table summarises the value of urban, rural and composite properties and the tax assessed on each:

State Land Tax—Value of Properties and Tax Assessed
(**\$'000**)

Year	Gross Unimproved Value				Tax Assessed			
	Urban	Rural	Composite (a)	Total	Urban	Rural	Composite (a)	Total
1964-65 ..	182,497	90,412	17,612	290,520	1,367	118	188	1,672
1965-66 ..	200,514	99,253	17,969	317,735	1,686	142	214	2,043
1966-67 ..	211,334	98,382	19,428	329,145	1,709	158	241	2,109
1967-68 ..	221,645	108,474	21,544	351,664	1,773	238	280	2,291
1968-69 ..	219,577	134,405	21,038	375,020	1,857	247	274	2,379

(a) Properties made up of both urban and rural land.

State Deceased Persons' Estates Duties

The legislation dealing with State Deceased Persons' Estates Duties is contained in Acts No. 42 of 1957 and No. 62 of 1962. The following table gives details of assessments for 1968-69:

State Deceased Persons' Estates Duties
Number of Estates, Net Value and Tax Assessed, 1968-69

Grade of Dutiable Value	Estates		Net Value as Assessed	Total Duty Assessed (a)	Average Duty	
	Number Examined	Number Taxable			Per Estate Examined	Per Taxable Estate
\$	no.	no.	\$'000	\$'000	\$	\$
1- 500 ..	135	10	23	..	2.8	37.6
501- 1,000 ..	57	10	43	1	13.7	78.0
1,001- 1,500 ..	74	29	95	2	26.2	66.8
1,501- 2,000 ..	73	23	123	2	32.7	103.8
2,001- 3,000 ..	138	36	342	8	56.9	218.1
3,001- 4,000 ..	129	38	455	12	94.0	319.1
4,001- 5,000 ..	118	75	502	15	129.0	202.9
5,001- 6,000 ..	107	80	581	19	173.5	232.1
6,001- 8,000 ..	165	120	1,150	46	279.3	384.0
8,001- 10,000 ..	106	79	931	42	396.9	532.5
10,001- 15,000 ..	160	121	1,821	95	591.7	782.4
15,001- 20,000 ..	109	99	1,667	100	916.0	1,008.5
20,001- 30,000 ..	94	94	2,253	193	2,056.8	2,056.8
30,001- 40,000 ..	57	56	1,892	183	3,211.7	3,269.0
40,001- 50,000 ..	28	28	1,292	123	4,394.3	4,394.3
50,001-100,000 ..	80	80	4,862	650	8,119.3	8,119.3
100,001 and over ..	47	47	7,709	1,702	36,203.4	36,203.4
Adjustments ..	..	..	..	-140	..	..
Total ..	1,677	1,025	25,742	3,052	..	..

(a) Rates of duty and levels of exemption vary according to the class of beneficiary and the type of asset contained in the estate.

Motor Taxation

The chief components of motor taxation are: (i) motor tax assessed on a power-weight formula; (ii) vehicle registration fees; (iii) drivers' and riders' licences; (iv) other registration fees mainly related to public vehicles.

Details of motor taxation collections are shown in the following table:

State Motor Taxation
(\$'000)

Particulars	1966-67	1967-68	1968-69
Registration Fees	562	584	634
Motor Tax (a)	3,424	4,041	4,222
Licences, Drivers and Riders	486	495	516
Public Vehicle Licensing, Fees, etc.	388	401	407
Stamp Duty on Third Party Insurance	265	275	291
Stamp Duty on Vehicle Registration .. .. .	..	189	342
Total	5,125	5,986	6,412
Paid into Consolidated Revenue	4,031	4,860	5,220
Retained by Transport Commission	1,094	1,126	1,192

(a) Net of refunds.

The principle applicable to motor taxation is that it must be devoted to expenditure on roads. Most of the taxation shown in the previous table is passed, via Consolidated Revenue, to the State Highway Trust Fund but a proportion is paid to the Transport Commission; details of this dissection appear in the earlier table 'Tax Collections by the Tasmanian Government'.

Racing Taxation

Under the *Racing and Gaming Act 1952*, licensed bookmakers pay a turnover commission of $2\frac{1}{2}$ per cent if fielding at a Tasmanian course or taking bets on Tasmanian events at off-course premises.

Betting on races outside Tasmania made at off-course premises is taxed at $2\frac{1}{2}$ per cent and this levy, together with totalisator tax (5 per cent city and $2\frac{1}{2}$ per cent country), is payable to Consolidated Revenue once charges have been met.

Details of Racing Taxation are:

State Racing Taxation—Collection and Distribution
($\$'000$)

Particulars	1966-67	1967-68	1968-69
Totalisator Tax (a)	56	r 61	54
Bookmakers' Commission and Licences (a)	895	r 1,069	1,060
Stamp Duty on Bookmakers' Tickets (b)	176	192	199
Total	1,127	r 1,321	1,313
Paid into Consolidated Revenue (b)	685	807	826
Adjustment (c)	15	r 3	—8
Racing Commission Expenses (a)	37	40	43
Stipendiary Stewards' Expenses (a)	11	11	12
Racing Clubs' Commission (a)	340	420	400
Racing Assistance Fund (a)	40	40	40

(a) Accounting year ended 31 July.

(b) Financial year ended 30 June.

(c) For different accounting periods; see notes (a) and (b).

The two charges made on the betting turnover tax are: (i) the administrative costs of the Racing Commission, with an annual maximum of \$40,000; and (ii) a contribution to the racing assistance fund, again with an annual maximum of \$40,000.

The turnovers on which commissions were levied are as follows:

Betting—Bookmakers' Turnover and Totalisator Investments
($\$'000$)

Particulars	1966-67	1967-68	1968-69
Licensed Bookmakers' Turnover	35,091	42,090	41,705
Totalisator Investments	1,174	1,277	1,145
Total Betting Turnover	36,265	43,367	42,849

State Taxation on Lotteries

From 1942 (when the Commonwealth Government became the sole collector of income tax), lotteries conducted from Hobart by Tattersalls (George Adams Estate) were Tasmania's chief source of revenue from State taxation. On 14 July 1954, the promoters transferred their operations to Victoria. A new organisation—Tasmanian Lotteries—was granted a licence and operated until 30 September 1961, when the proprietor surrendered the licence. No operator is now licenced.

The following records the contributions made to Consolidated Revenue by lotteries taxation from 1949-50:

Taxation and Stamp Duties Imposed on Lotteries—Paid to Consolidated Revenue (\$'000)

Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties
1949-50 ..	2,152	1953-54 ..	3,032	1957-58 ..	740
1950-51 ..	2,430	1954-55 ..	1,152	1958-59 ..	432
1951-52 ..	2,634	1955-56 ..	2,114	1959-60 ..	278
1952-53 ..	2,952	1956-57 ..	1,930	1960-61 ..	60

In September 1960, the *Racing and Gaming Act* 1952 was amended to permit agreements with other States for the sale of their lottery tickets in Tasmania. Under an agreement with the Victorian Government, Tattersalls were allowed to sell tickets through accredited Tasmanian representatives; the Victorian Government was to pay quarterly to the Tasmanian Government 15½ per cent of the value of subscriptions made as a result of this concession.

For the purpose of Public Finance Statistics, these amounts are classified not as 'taxation' but as 'payments from other States'.

The following table shows the payments made under the interstate agreement since its inception in 1961-62.

Payments to Tasmanian Government Based on Sale of Tattersalls Lottery Tickets (\$)

Year	Amount	Year	Amount
1961-62	137,914	1965-66	152,338
1962-63	134,476	1966-67	140,995
1963-64	145,394	1967-68	138,372
1964-65	146,500	1968-69	141,624

Liquor Tax and Related Licences

The State collects taxes on liquor sales and licence fees from hotels, liquor wholesalers and licensed clubs under the *Licensing Act* 1932. The major item of revenue in 1968-69 was percentage fees (89 per cent of total collections under the Licensing Act which replaced the 'liquor tax' during 1965-66. The liquor tax was levied on the value of purchases of liquor made by publicans and licensed clubs and sales by wholesale distributors to final consumers during the year of collection. Following an amendment passed in 1965 the 'liquor tax' was replaced by 'percentage fees' which are levied on purchases by hotels and licensed clubs and sales to final consumers by wholesalers, but calculated on values for the year preceding collection.

Liquor Tax and Related Licences Collected Under the Licensing Act (\$'000)

Tax or Licence	1964-65	1965-66	1966-67	1967-68	1968-69
Liquor Tax	547	589	..	..	..
Percentage Fees .. ..	..	49	749	830	944
Publicans' and Other Licences under the Licensing Act ..	32	30	39	23	25
Wholesale Licences	46	67	95	93	98
Registration of Clubs	5	4	4	4	5
Total	630	739	887	950	1,072

PRIVATE FINANCE

Overseas Exchange Rates

The next table shows overseas exchange rates:

Overseas Exchange Rates (a)

Country	Basis of Quotation	1966-67	1967-68	1968-69	March 1970
New Zealand ..	Dollars to \$A1 (b)	0.803	0.910	0.998	0.998
United Kingdom ..	Pound Stg to \$A1 (b)	0.398	0.436	0.465	0.465
Belgium	Francs to \$A1	55.10	54.99	55.39	55.23
Canada	Dollars to \$A1	1.20	1.20	1.19	1.20
Ceylon	Rupees to \$A1	5.27	5.99	6.57	6.59
China (Mainland) (c) ..	New Yuan to \$A1	2.74	2.74	2.72	2.72
France	Francs to \$A1	5.46	5.45	5.49	6.17
Germany (West) ..	Deutsche Marks to \$A1	4.41	4.43	4.40	4.08
Hong Kong	Dollars to \$A1	6.37	6.61	6.76	6.74
India	Rupees to \$A1	8.33	8.33	8.33	8.33
Italy	Lire to \$A1	691.00	690.00	689.00	699.00
Japan	Yen to \$A1	400.98	400.95	396.55	397.86
Malaysia	Dollars to \$A1	3.399	3.382	3.38	3.41
Netherlands	Guilders to \$A1	4.00	3.99	4.01	4.04
Pakistan	Rupees to \$A1	5.28	5.28	5.28	5.28
Singapore	Dollars to \$A1	3.40	3.40	3.38	3.41
South Africa	Rands to \$A1	0.795	0.795	0.795	0.795
Switzerland	Francs to \$A1	4.79	4.81	4.77	4.80
U.S.A.	Dollars to \$A1	1.11	1.11	1.11	1.12
U.S.S.R. (c)	Roubles to \$A1	1.004	1.004	1.004	1.004

(a) Average telegraphic transfer selling rates at Sydney.

(b) Usual basis of quotation: (i) \$A to \$N.Z. 1; (ii) \$A to £1 Stg. Value quoted is an inversion.

(c) Rates of exchange used in converting import values to Australian currency for purposes of calculating customs duty.

Banking

Types of Bank

Banks in Tasmania can be classified by ownership as follows: (i) Government—the Reserve Bank of Australia, the Commonwealth Development Bank of Australia, the Commonwealth Trading Bank of Australia, and the Commonwealth Savings Bank; (ii) Private—the private trading banks and the private savings banks; (iii) Trustee—the Hobart and the Launceston Savings Banks. The Agricultural Bank is *not* a bank for the purpose of these statistics.

For statistical purposes, such a classification is not helpful since banks, both government and private, may be engaged in the same type of activity. Hence, the classification in actual use is one which groups banks according to their type of activity, not according to their ownership. The major banking statistics for the State are presented in two distinct series under the following headings: (i) all cheque-paying banks; (ii) all savings banks.

Cheque-Paying Banks

The following institutions in Tasmania are classified, for statistical purposes, as 'cheque-paying banks': Commonwealth Trading Bank of Australia; Australia and New Zealand Bank Ltd; Bank of New South Wales; Commercial Bank of Australia Ltd; Commercial Banking Company of Sydney Ltd; English, Scottish and Australian Bank Ltd; and National Bank of Australasia Ltd. In 1969 the E. S. & A. Bank Ltd and the A.N.Z. Bank Ltd merged to operate as the one banking group.

Savings Banks

In the 1950s, only three savings banks operated branches in Tasmania: Hobart Savings Bank, Launceston Savings Bank and Commonwealth Savings Bank. (The trustee savings banks date from early colonial days, that at Launceston opening in 1835, and at Hobart in 1845.) In recent years, private trading banks have opened savings bank subsidiaries in the State, the relevant dates being A.N.Z., September 1959; Bank of N.S.W., September 1961; E. S. & A., October 1961; National, May 1962; Commercial (of Australia), July 1962; Commercial (of Sydney), March 1963. All banks which previously operated as cheque-paying banks now provide savings bank facilities. Following the 1969 merger of the E. S. & A. and A.N.Z. banks there are eight separate enterprises operating savings bank business within the State. Savings banks also offer cheque facilities to customers; however, for statistical purposes their cheque operations are included in 'savings banks' statistics.

Banking Legislation

Under Section 51 of the Commonwealth Constitution, the Commonwealth Parliament has power to legislate with respect to 'banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money'. The principal Commonwealth Acts at present in force relating to banking are as follows:

The Reserve Bank Act 1959-1966: Provision for the constitution and management of the Reserve Bank of Australia and the management of the Australian note issue. (Central banking functions had previously been vested in the Commonwealth Bank of Australia.)

The Banking Act 1959-1967: Objects are (i) to provide a legal framework uniform throughout Australia for regulating the banking system; (ii) to safeguard depositors of the banks from loss; (iii) to provide for the co-ordination of banking policy under the direction of the Reserve Bank; (iv) to control the volume of credit in circulation and bank interest rates; (v) to mobilise and to provide machinery for the control of foreign exchange and the gold resources of the Australian economy.

The Commonwealth Banks Act 1959-1968: This Act created the Commonwealth Banking Corporation as the controlling body for the newly-constituted Commonwealth Trading Bank of Australia, Commonwealth Savings Bank of Australia and Commonwealth Development Bank of Australia. The Corporation and its constituent banks are subject to the same banking controls as are the private trading banks. (The Commonwealth Bank, established in 1911, had performed a number of diverse roles, e.g. as a trading bank, a savings bank and a central bank. The effect of the new legislation was to isolate the individual functions and to constitute a separate establishment for each.)

Transactions of Cheque-Paying Banks

The accompanying table summarises the principal statistics relating to all cheque-paying banks in Tasmania for a five-year period. The following definitions apply:

- (i) Deposits—an item among banks' liabilities. The figure is the average, for the year, of *balances* read at weekly intervals.
- (ii) Loans, Advances and Bills Discounted, etc.—an item among banks' assets. The figure is the average, for the year, of *balances* read at weekly intervals.
- (iii) Debits to Customers' Accounts—in general, mainly the total of all cheques drawn by customers during a given period. The figure is the weekly average of such entries for the year.

**Transactions—All Cheque-Paying Banks
(Including Commonwealth Trading Bank)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Branches in Tasmania at End of Year	no. 101	no. 100	no. 101	no. 105	no. 105
Weekly Averages—	\$'000	\$'000	\$'000	\$'000	\$'000
Deposits—					
Commonwealth and State Governments	580	754	1,719	1,953	2,502
Other—					
Fixed	29,483	34,970	39,427	42,096	46,585
Current—Bearing Interest	5,481	5,919	6,977	7,788	8,018
Not Bearing Interest	59,059	60,867	63,969	65,975	67,369
Total	94,603	102,507	112,091	117,811	124,473
Loans, Advances and Bills Discounted (a)	54,124	55,214	60,460	69,297	72,394
Debits to Customers' Accounts (b)	41,340	43,105	47,103	51,222	55,728

(a) Excludes loans to authorised dealers in the short-term money market.

(b) Excludes debits to Australian Government account at Hobart branches. In addition to the cheque-paying banks' transactions, those of the Rural Credits Department of the Reserve Bank and the Commonwealth Development Bank are included in this item.

Fixed Deposit Rates

The next table shows the maximum interest rates received by customers of trading banks in respect of fixed deposits for specified periods:

**Trading Banks—Maximum Fixed Deposit Rates
(Per Cent Per Annum)**

Date From Which Operative	Deposits for—		
	Three Months and under Twelve	Twelve Months and under Eighteen (a)	Eighteen Months and under Twenty-four (b)
1 July 1961 .. .. .	..	4.25	..
13 April 1962	3.75	4.00	..
1 April 1963	3.25	3.50	..
8 April 1964	(c) 3.75	4.00	..
29 September 1964 .. .. .	..	4.00	4.25
10 March 1965	(c) 4.25	4.50	4.50
17 August 1966	(c) 4.00	4.25	..
27 June 1968	(c) 4.25	4.50	4.75
1 August 1969	(d) 4.50	4.70	5.00
1 April 1970 (e)	4.80	5.00	5.30

(a) Maximum periods for fixed deposits: 12 months to 9 September 1962; 12 to 15 months 10 September 1962 to 28 September 1964; 12 to 18 months 29 September 1964 to 26 June 1968; from 27 June 1968, 12 and under 18 months.

(b) From 29 September 1964 banks could accept fixed deposits for periods over 18 and up to 24 months, from 27 June 1968, 18 and under 24 months.

(c) From 8 April 1964, fixed deposits exceeding \$100,000 for periods from one to three months could be accepted at the rates shown.

(d) From 1 August 1969 separate interest rates applied to fixed deposits of \$100,000 and over. Rates on such deposits were: 30 days but less than 3 months, 4.5 per cent; 3 months but less than six, 4.8 per cent; 6 months but less than 12, 4.9 per cent; 12 months but less than 24, 5.0 per cent.

(e) From 1 April 1970, rates apply to deposits of less than \$50,000. Deposits of \$50,000 or more attract an interest rate of 5.50 per cent.

Transactions of Savings Banks

The following table summarises the principal statistics relating to savings banks in Tasmania. Deposits are compiled on a basis different from that used in the case of cheque-paying banks. 'Deposits lodged' is the total inflow of deposits during the year, and 'depositors' balances' is a single liability reading taken at the end of the year.

Transactions—All Savings Banks

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Number at End of Year—	no.	no.	no.	no.	no.
Branches in Tasmania ..	147	147	148	151	151
Operative Accounts ..	379,243	394,664	413,413	432,112	452,280
Deposits Lodged during Year ..	\$'000 142,382	\$'000 153,444	\$'000 189,026	\$'000 203,850	\$'000 217,531
Interest Added during Year ..	4,108	4,710	5,300	5,857	6,529
Excess of Deposits over Withdrawals	6,858	7,955	13,405	4,864	5,687
Depositors' Balances—End of Year	135,736	148,401	167,106	177,827	190,043
Per Head of Population—	\$	\$	\$	\$	\$
Depositors' Balances—End of Year	369	400	444	467	490

Savings Bank Interest Rates

The next table shows maximum rates of interest applying to operations of the Hobart Savings Bank, firstly as received by depositors, and secondly, as charged to borrowers with home mortgages.

Hobart Savings Bank—Maximum Interest Rates
(Per Cent Per Annum)

Date of Change In Rate	On Savings Accounts (a)	On Home Mortgages	Date of Change In Rate	On Savings Accounts (a)	On Home Mortgages
1 Jan. 1961 ..	3.50	5.75	1 June 1964 ..	3.50	..
1 July 1961 ..	3.75	..	1 April 1965 ..	3.75	5.75
1 Aug. 1962 ..	..	6.00	1 June 1966 ..	..	6.00
1 April 1963 ..	3.25	..	1 Aug. 1968 ..	4.00	6.25
1 May 1963 ..	..	5.50	1 May 1970 ..	4.25	6.25

(a) Interest on fixed deposits is as for cheque-paying banks.

Insurance*Definitions*

The data on insurance that follow are divided into two parts: (i) life insurance; (ii) insurance other than life, i.e. fire, marine and general insurance. No distinction is made between insurance and assurance, the former term being used in all contexts.

Legislation

Section 51 of the Commonwealth Constitution confers the necessary powers on the Commonwealth Parliament to legislate with respect to 'insurance other than State insurance; also State insurance extending beyond the limits of the State concerned'. The principal Commonwealth legislation affecting current insurance business is as follows:

Insurance Act 1932-1966: Insurance businesses are required to lodge a deposit with the Commonwealth Treasurer, interest on the invested deposit being paid to the depositor. Deposits remain as a security against liability to policy holders, and are available to satisfy judgments obtained in respect of policies. The following insurance business is exempted from these provisions: staff superannuation schemes; schemes of religious organisations solely for insurance of their property; friendly society, union and association schemes involving superannuation or insurance benefits to employees. Deposits with a State made prior to the legislation could remain with the State and reduce the amount needed for deposit with the Commonwealth. The passing of the *Life Insurance Act 1945-1965* had the effect of adding life insurance business to the list of activities exempted from the provisions of the *Insurance Act 1932-1966*.

Life Insurance Act 1945-1965: Objects are: (i) to replace all State legislation on the subject of life insurance, except that relating to operations of a State insurance office within a specific State, and to provide uniform legislation for the whole of Australia; (ii) to appoint an Insurance Commissioner to exercise active supervision of the activities of life insurance companies, with a view to securing the greatest possible protection of policy holders; (iii) to set up adequate machinery for dealing with any company that fails to maintain a required minimum standard of solvency.

Life Insurance

Since 1947, returns lodged under the *Life Insurance Act 1945-1965* have been used to compile life insurance statistics. In Tasmania, the Government Insurance Office does not transact life business so the tables that follow refer to the operations of enterprises exclusively in the private sector. The transactions in the next table are concerned with Tasmania as the State of issue of the policies, not necessarily as the State of risk. The following summarises the principal statistics relating to life insurance business carried on in Tasmania:

Life Insurance Transactions (Excluding Annuities)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
ORDINARY BUSINESS					
New Policies Issued—					
Number	12,340	12,336	14,024	14,974	15,597
Sum Insured \$'000	47,907	52,110	62,517	76,251	83,946
Annual Premiums \$'000	1,131	1,201	1,408	1,749	1,927
Policies Discontinued or Reduced—					
Number	9,304	9,588	9,059	9,409	9,584
Sum Insured \$'000	21,434	23,126	23,624	27,722	31,094
Annual Premiums \$'000	542	547	587	622	693
INDUSTRIAL BUSINESS (a)					
New Policies Issued—					
Number	3,077	3,058	3,418	3,190	3,090
Sum Insured \$'000	2,684	2,801	3,570	3,212	3,524
Annual Premiums \$'000	103	110	139	126	133
Policies Discontinued or Reduced—					
Number	6,530	6,610	5,659	4,662	4,448
Sum Insured \$'000	2,042	2,091	2,063	2,199	2,470
Annual Premiums \$'000	88	92	89	92	104

Life Insurance Transactions—continued

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
SUPERANNUATION BUSINESS					
New Policies Issued—					
Number	2,271	2,252	2,857	2,542	2,300
Sum Insured \$'000	17,677	19,734	19,446	28,599	24,714
Annual Premiums \$'000	502	613	636	909	727
Policies Discontinued or Reduced—					
Number	2,888	2,048	2,671	2,371	3,883
Sum Insured \$'000	9,102	9,258	11,188	10,778	14,738
Annual Premiums \$'000	274	270	317	332	455
TOTAL BUSINESS					
New Policies Issued—					
Number	17,688	17,646	20,299	20,706	20,987
Sum Insured \$'000	68,265	74,645	85,533	108,062	112,833
Annual Premiums \$'000	1,736	1,924	2,182	2,784	2,787
Policies Discontinued or Reduced—					
Number	18,722	18,246	17,389	16,442	17,915
Sum Insured \$'000	32,579	34,476	36,875	40,699	48,302
Annual Premiums \$'000	905	908	993	1,046	1,253
NEW LOANS PAID OVER (EXCLUDING ADVANCES OF PREMIUMS)					
On Mortgage of Real Estate \$'000	3,131	3,783	2,455	2,732	4,886
On Companies' Policies \$'000	929	990	1,132	1,274	1,631
On Other Securities \$'000	12	8	408	13	15
Total Loans Granted \$'000	4,070	4,782	3,995	4,019	6,531

(a) Industrial business refers, in the main, to policies on which the premiums are collected as regular instalments by agents on commission.

Statistics in the following table are based on information contained in returns submitted by life insurance companies.

Life Insurance—Policies in Force (a)

Particulars	1965	1966	1967	1968	1969
Policies no.	211,971	212,761	217,435	222,346	224,613
Sum Insured \$'000	431,153	477,648	535,860	604,944	667,773
Annual Premiums \$'000	12,040	13,222	14,620	16,415	17,942

(a) At 31 December in each year.

Fire, Marine and General Insurance

Information for insurance, other than life, is compiled from returns provided by insurance companies transacting marine and general insurance business in Tasmania (including the Tasmanian Government Insurance Office). Statistics that follow are for financial years of companies ending within the period shown.

Definitions: The following definitions apply:

- (i) Premiums represent the full amount receivable in respect of policies issued and renewed in the year, less returns, rebates and bonuses paid or credited to policy-holders during the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts differ from 'earned premium income' appropriate to the year. When business is increasing, as shown in the statistics, premiums receivable are greater than 'earned premium income' appropriate to the year. The converse applies when business is declining.
- (ii) Claims include payments made during year, *plus* estimated amount of outstanding claims at end of year, *less* estimated amount of outstanding claims at beginning of year.
- (iii) Contributions to fire brigades, commission and agents' charges, and expenses of management are those amounts actually paid during the year.
- (iv) Taxation represents payments made during the year, including income tax, pay-roll tax, licence fees, stamp duty (where paid by the Company), etc. Income tax paid during the year is based on the income of earlier years.

The following table should not be construed as a Profit and Loss Statement; selected revenue and expenditure items only have been used. In cases where the business is underwritten in one State and the risk situated in another, the business is included in the State of issue.

Fire, Marine and General Insurance
('\$000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Premiums (less Returns, Rebates and Bonuses)	13,567	14,703	15,879	17,413	19,380
Interest, Dividends, Rents ..	264	309	345	385	434
Total Revenue ..	13,831	15,011	16,225	17,799	19,814
Claims (less Amounts Recoverable)	7,854	9,153	16,158	16,890	10,865
Contributions to Fire Brigades ..	230	250	242	298	508
Commission and Agents' Charges ..	1,601	1,617	1,760	1,863	2,063
Expenses of Management ..	2,662	2,840	3,248	3,497	3,929
Taxation	692	623	664	749	(a) 588
Total	13,039	14,484	22,071	23,297	17,953

(a) Prior to 1968-69, stamp duty on insurance policies was paid by the issuing company. The decrease in taxation paid in 1968-69 is due to some companies requiring the policy holder to pay the stamp duty.

The major classes of business in terms of premiums (less returns, rebates and bonuses) with corresponding claim figures (less amounts recoverable for 1968-69 were (in '\$000): motor vehicles \$5,770 (\$3,974); workers' compensation, \$3,437 (\$1,992); fire, \$3,185 (\$977); compulsory third party, (\$1,838 (\$2,001); householders' comprehensive \$1,741 (\$512).

Types of Insurance: The next table shows premiums and claims according to the class of insurance business transacted in 1968-69. ('Premiums' and 'Claims' have been compiled in accordance with the definitions introducing the section.)

Premiums and Claims for Each Type of Insurance, 1968-69
(£'000)

Class of Business	Premiums	Claims	Class of Business	Premiums	Claims
Fire	3,141	944	Public Risk, Third Party	395	130
Householders' Comprehensive	1,717	504	General Property	77	37
Sprinkler Leakage	6	1	Plate Glass	88	59
Loss of Profits	415	(a) —381	Boiler	36	20
Fruit Crop	28	58	Livestock	29	15
Marine	754	638	Burglary	244	124
Motor Vehicles	5,691	3,916	Guarantee	29	33
Motor Cycles	34	16	'Pluvius'	15	5
Compulsory Third Party (Road Accidents)	1,797	1,959	Aviation	32	15
Workers' Compensation	3,400	1,953	All Risks	128	64
Personal Accident	739	373	Television	2	1
Contractors' All Risks	32	—3	Other (b)	271	115
			Total	19,099	10,596

(a) Large negative figure is due to adjustments made to offset over-estimation of claims outstanding at the end of 1966-67 and 1967-68.

(b) Includes 'Seamen's Compensation'.

Ratio of Claims to Gross Premiums: The following table shows, as a percentage, the ratio of claims to premiums for the more important classes of business over a five-year period:

Fire, Marine and General Insurance
Ratio of Claims to Premiums (a)
(Per Cent)

Class of Business	1964-65	1965-66	(b) 1966-67	(b) 1967-68	1968-69
Fire	33.1	36.4	191.9	r 194.6	30.1
Householders' Comprehensive	25.4	25.3	199.8	99.5	29.3
Loss of Profits	31.4	35.0	188.5	r 132.9	(c)
Marine	41.3	44.8	44.7	98.9	84.6
Motor Vehicles (Excluding Motor Cycles)	68.4	62.8	68.1	r 69.3	68.8
Compulsory Third Party (Road Accidents)	85.3	95.0	98.8	102.4	109.0
Workers' Compensation	53.7	59.1	72.9	67.6	57.4
Personal Accident	44.2	45.6	38.0	49.5	50.4
Public Risk, Third Party	67.7	42.4	30.0	33.4	33.0
Plate Glass	57.2	56.1	55.5	61.9	67.8
Burglary	65.2	54.7	53.7	64.3	51.0
All Classes	57.9	62.3	101.5	97.0	55.5

(a) See beginning of section for definition of claims and premiums.

(b) The fire disaster of 7 February 1967 affected some ratios.

(c) See note (a) to previous table.

Finance Companies

'Finance companies' for the purpose of these statistics are incorporated companies engaged *mainly* in providing business and the general public with credit facilities of the following types: hire purchase and other instalment credit for retail sales; wholesale hire purchase; other consumer and commercial loans; and factoring.

Companies engaged in activities additional to financing still come within the scope of these statistics provided that the major portion of their assets consists of financial assets arising from activities of the types listed above, and/or a major proportion of their income is derived from such assets. Companies are excluded if: (i) the major proportion of their balances outstanding consists of agreements written for the purpose of financing their own sales; or (ii) they are engaged mainly in financing, in any way, the operations of related companies.

Definitions

Instalment Credit for Retail Sales: This category covers all types of instalment credit schemes of finance companies which relate primarily to the financing of retail sales of goods. Instalment credit relates to repayment made by regular predetermined instalments and includes hire purchase, time payment, budget account and personal loan schemes. In these statistics the term 'retail sales' relates to sales: (i) principally to the final consumer of new and second-hand goods generally used for household and personal purposes (as in the Bureau's Censuses of Retail Establishments) and (ii) to the final purchaser for other purposes (e.g. plant and machinery, tractors). The amount financed in this category is classified according to the following types of commodities: (i) *motor vehicles, etc.*: motor cars and motor cycles, commercial vehicles, tractors, caravans, trailers, motor parts and accessories, etc. (new and used compiled separately); (ii) *plant and machinery*: farm machinery and implements, earth-moving equipment, aircraft, industrial plant and machinery, business machinery and equipment (including commercial refrigeration equipment), etc.; (iii) *household and personal goods*: furniture, furnishings and floor coverings, domestic refrigerators, electrical goods, radios, television sets, musical instruments, bicycles, motor mowers, clothing, etc.

Wholesale Hire Purchases: This category relates mainly to the financing of motor vehicle dealers' stocks held under bailment or floor plan schemes but also includes finance in respect of other trading stock.

Other Consumer and Commercial Loans: This term covers: (i) personal loans other than those in the categories of mortgage loans and instalment credit for retail sales; (ii) mortgage loans; (iii) commercial loans, i.e. all loans and advances to businesses not included elsewhere in these statistics.

Factoring: This term is used by finance companies in various senses, but in these statistics, relates to loans on the security of 'trade' debts and purchases of 'trade' debts. ('Trade' debts are those owing to business for goods or services supplied to other businesses.)

Amount Financed: Amount financed is the actual amount of cash provided. It excludes interest, insurance, hiring and other charges, and initial deposits. For purchases of existing finance agreements and trade debts purchased, it represents the amount of cash paid to the seller.

Balances Outstanding: Balances outstanding are the amounts owing on all finance agreements as shown in the books of the companies at the end of the relevant period. Accounting practice with respect to inclusion in balances outstanding, of unmatured charges, interest and insurance, differs between finance companies and between types of finance agreements. Because of this, details of balances outstanding are given separately for those contracts including, and for those excluding, such charges.

Collections and Other Liquidations: Collections are cash collections of capital repayments, hiring charges, interest and insurance. Other liquidations are any reductions in balances outstanding other than by cash collections; they include bad debts written off and rebates for early payments.

**Finance Companies—Collections and Other Liquidations and Balances Outstanding
by Type of Agreement
(\$m)**

Year	Contracts including Charges			Contracts excluding Charges				Total all Contracts
	Instalment Credit for Retail Sales	Other Consumer and Commercial Loans	Total	Wholesale Hire Purchase	Other Consumer and Commercial Loans	Factoring	Total	

COLLECTIONS AND OTHER LIQUIDATIONS OF BALANCES

1964-65 ..	25.7	1.6	27.3	6.2	0.1	6.2	33.5
1965-66 ..	27.2	1.4	28.7	9.5	0.5	10.0	38.7
1966-67 ..	28.6	1.6	30.2	20.8	0.3	21.1	51.3
1967-68 ..	30.1	1.5	31.5	23.9	0.1	24.0	55.5
1968-69 ..	33.9	1.4	35.3	26.1	0.2	26.3	61.6

BALANCES OUTSTANDING AT END OF YEAR

1964-65 ..	32.0	2.5	34.5	1.3	0.2	1.5	36.0
1965-66 ..	33.8	2.3	36.1	2.3	0.3	2.6	38.6
1966-67 ..	35.5	2.1	37.6	2.9	0.3	3.2	40.8
1967-68 ..	39.9	1.7	41.6	4.3	0.5	4.8	46.4
1968-69 ..	41.8	1.5	43.3	3.9	0.9	4.8	48.1

**Finance Companies—Amount Financed by Type of Agreement
(\$m)**

Year	Instalment Credit for Retail Sales	Wholesale Hire Purchase	Other Consumer and Commercial Loans			Factoring	Total all Contracts
			Personal Loans	Mortgage Loans	Commercial Loans		
1964-65	20.5	6.5	0.3	0.3	0.4		27.9
1965-66	21.4	10.4	0.4	0.4	0.7		33.2
1966-67	22.7	21.4	0.4	0.5	0.5		45.4
1967-68	26.2	25.2	0.5	0.1	0.5		52.6
1968-69	27.2	25.7	0.8	..	0.8		54.4

The value of capital goods (business equipment and plant) leased by finance companies is shown in the table below over a five-year period.

**Finance Companies—Business Equipment and Plant on Lease
(\$m)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Initial Capital Cost of Goods Leased during Period	<i>n.a.</i>	<i>n.a.</i>	2.1	2.6	2.5
Balances Outstanding (Capital Costs less Depreciation)	0.8	1.9	2.9	4.7	5.0

In the following table the amount financed in respect of instalment credit for retail sales agreements is further classified by type of commodity.

Instalment Credit for Retail Sales—Finance Companies
Amount Financed, Collections and Other Liquidations, and Balances Outstanding (\$m)

Year		Amount Financed during Year				Collections and other Liquidations during Year			Balances Outstanding at End of Year	
		Motor Vehicles, etc.		Plant and Machinery	Household and Personal Goods	Total	Cash Collections	Other Liquidations		Total
New	Used									
1964-65	..	6.7	9.2	1.7	2.8	20.5	24.5	1.2	25.7	32.0
1965-66	..	7.4	9.3	2.1	2.5	21.4	26.0	1.2	27.2	33.8
1966-67	..	7.9	10.3	2.1	2.4	22.7	27.7	0.9	28.6	35.5
1967-68	..	9.5	11.4	2.8	2.6	26.2	29.3	0.8	30.1	39.9
1968-69	..	9.4	11.8	3.4	2.6	27.2	33.0	0.9	33.9	41.8

General

Instalment Credit for Retail Sales in Tasmania

The collection of data on instalment credit transactions began as a series dealing simply with the hire purchase operations of non-retail finance businesses, it was then expanded to cover the hire purchase operations of retail businesses. The final stage was reached when a concept of instalment credit, considerably broader than just hire purchase, was introduced.

In the next table the *instalment credit for retail sales* transactions of finance companies (see previous section) are part of 'All Businesses', but *finance company* and *non-retail finance business* are not synonymous terms (e.g. a non-retail finance business need not necessarily be an incorporated company).

The statistics cover operations of all types of instalment credit schemes which relate primarily to the financing of retail sales of goods, whether the credit is advanced by a retail business or by a non-retail finance business. In general, the term 'instalment credit' is defined as relating to schemes in which repayment is made by regular pre-determined instalments. Types of schemes covered include hire purchase, time payment, budget account, and personal loan schemes which relate primarily to financing of retail sales of goods. The term 'retail sales' relates not only to retail sales covered by the Censuses of Retail Establishments, but includes also other sales of goods to final purchasers (e.g. plant and machinery).

Figures for amounts financed *exclude* interest, hiring charges, insurance, etc. Figures for balances outstanding and collections *include* interest, hiring charges, insurance, etc. Details are not available of these charges or of other items (e.g. rebates allowed for early payment, late payment charges, bad debts written off) which affect the reconciliation of the three main instalment credit series: amounts financed, collections and balances outstanding.

Statistics of amount financed are classified by type of goods, defined as follows: (i) *Motor Vehicles, etc.*—motor cars and motor cycles, commercial vehicles, tractors, caravans, trailers, motor parts and accessories, etc.; (ii) *Plant and machinery*—farm machinery and implements, earth-moving equipment, aircraft, industrial plant and machinery, business machinery and equipment, etc.; and (iii) *Household and personal goods*—furniture, furnishing and floor coverings, domestic refrigerators, electrical goods, radios, televisions, musical

instruments, bicycles, motor mowers, clothing, etc. The next table shows Tasmanian operations on an annual basis, but monthly and quarterly series are also published.

Instalment Credit for Retail Sales (a)
(Hire Purchase and Other Instalment Credit)
(\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
FINANCED BY RETAIL BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles, etc. (c)—New	363	291	299	299	452
Used	193	109	123	131	369
Total Vehicles ..	588	400	422	430	821
Plant and Machinery ..	5,102	4,807	4,776	4,859	5,498
Household and Personal Goods					
Total All Goods ..	5,660	5,207	5,198	5,289	6,319
Balances Outstanding at End of Period (d)	8,531	7,645	7,050	6,457	6,825
FINANCED BY NON-RETAIL FINANCE BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles, etc. (c)—New	8,198	8,516	8,419	10,330	9,906
Used	9,268	9,501	10,606	11,579	12,041
Total Vehicles ..	17,466	18,017	19,025	21,909	21,947
Plant and Machinery ..	2,232	2,686	2,604	3,117	3,882
Household and Personal Goods	3,956	3,633	3,780	4,082	4,394
Total All Goods ..	23,654	24,336	25,409	29,108	30,223
Balances Outstanding at End of Period (d)	35,722	37,495	38,777	43,070	45,332
FINANCED BY ALL BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles, etc. (c)—New	8,561	8,807	8,718	10,629	10,358
Used	9,463	9,610	10,729	11,710	12,410
Total Vehicles ..	18,024	18,417	19,447	22,339	22,768
Plant and Machinery ..	11,290	11,126	11,160	12,058	13,774
Household and Personal Goods					
Total All Goods ..	29,314	29,543	30,607	34,397	36,542
Balances Outstanding at End of Period (d)	44,253	45,140	45,827	49,527	52,157

(a) Includes time payment; budget account; and personal loan schemes relating primarily to the financing of retail sales.

(b) Excludes hiring charges, interest and insurance.

(c) Types of goods included are defined under 'Finance Companies'.

(d) Includes hiring charges, interest and insurance.

Friendly Societies

Scope

The details that follow refer to 'Ordinary' Societies, not to 'Special' Societies. Ordinary Societies are those which provide customary sick and funeral benefits and are subject to actuarial valuation. Special Societies restrict their membership to employees of industrial parent organisations and are not subject to actuarial valuation.

Membership

Friendly Societies were a form of social organisation to help members meet the costs of sickness, burial, etc. at a time when government social services were either meagre or non-existent. Membership reached a maximum (over 22,000 in male lodges) in the pre-depression years but has since steadily declined. From the 1950s, there has been rapid development of various government-encouraged insurance schemes to assist families with hospital and other expenses associated with sickness; such schemes have evolved, in general, outside the framework of the Friendly Society movement.

The principal benefits provided by Friendly Societies are sick pay, medical attendance and medicine, and funeral benefits (sums payable on death). As certain benefits are granted to members' wives and children the number of persons who may receive direct benefit is greater than the total membership.

The most striking long-term characteristics of Friendly Societies in Tasmania are the decline in their membership (from 8,557 in 1959 to 4,690 in 1968) and the increase in the average age of members (from 36.7 years in 1920 to 63.5 years in 1968 in male branches). The following table shows the percentage age distribution since 1920:

Friendly Societies—Percentage Distribution in Each Age Group and Total Membership of Male Lodges

Particulars	1920	1930	1940	1950	1960	1968
PROPORTION OF TOTAL MEMBERSHIP IN EACH AGE GROUP (PER CENT)						
Age Group (Years)—						
16-19	7.79	6.60	2.87	1.48	0.15	0.07
20-29	26.42	23.08	16.87	10.29	1.89	1.02
30-49	47.85	43.37	39.71	37.73	26.11	11.73
50-69	16.54	23.56	32.91	38.28	47.76	52.69
70 and over	1.40	3.39	7.64	12.22	24.09	34.49
Total	100.00	100.00	100.00	100.00	100.00	100.00
TOTAL MEMBERSHIP (NUMBER)						
Male Members	20,605	22,168	18,854	14,677	7,571	4,604

The next table shows the decline in the membership and number of societies during the 1960s.

Societies, Lodges and Membership (Number)

Particulars	1963	1964	1965	1966	1967	1968
Societies	11	8	8	8	8	8
Lodges—Male	110	108	107	107	r 107	105
Female	9	6	6	6	6	6
Benefit Members	6,364	5,778	5,481	5,181	r 4,937	4,690
Financial Members	6,156	5,723	5,429	5,128	r 4,856	4,612

Revenue and Expenditure

The following table shows the net revenue and expenditure (excluding interfund transfers and transfers between districts and lodges) of Friendly Societies for the financial years of the societies which ended in 1968.

Friendly Societies—Net Revenue and Expenditure, 1968
(£)

Revenue			Expenditure		
Particulars	Total	Per Financial Member	Particulars	Total	Per Financial Member
Members' Contributions (a) ..	31,186	6.76	Medical Attendance and Medicine ..	2,548	0.55
Interest, Rent and Dividends ..	78,072	16.93	Sick Pay ..	16,743	3.63
All Other Income ..	8,058	1.75	Funeral Benefits ..	48,519	10.52
			Administration ..	24,433	5.30
			Endowment Benefits	64,000	13.90
			Other ..	16,172	3.51
Total ..	117,316	25.44	Total ..	172,415	37.38

(a) Includes levies.

The details in the above table exclude transactions involving Friendly Societies acting as agents for Hospital or Medical Benefits Insurance Schemes.

Accumulated Capital

Accumulated capital of Ordinary Societies at the end of their financial years falling within the calendar year 1968 amounted to \$1,342,777 and the capital per financial member was \$291.15. The rate of return (interest, dividends and rents) earned by the funds was approximately 5.9 per cent in 1968. The following table shows the growth of the capital of Friendly Societies since 1920, together with the average capital per financial member.

Friendly Societies—Accumulated Capital
(£)

Year (a)	Capital		Year (a)	Capital	
	Total	Per Financial Member		Total	Per Financial Member
1920	549,194	26.23	1950	1,231,486	82.41
1930	819,372	36.62	1960	1,390,122	182.31
1940	989,328	50.91	1968	1,342,777	291.15

(a) At close of the financial years, observed by societies, which ended during calendar year shown.

Registered Building Societies*Types of Registered Society*

There are two distinct types of building society registered under Tasmanian law, specifically (i) permanent, and (ii) terminating (or co-operative).

Permanent Societies: These societies are both savings and deposit-receiving institutions which advance funds for home-building against the security of first

mortgages. Those who invest by taking shares or by making deposits are in a separate category from those who borrow to build a home—in other words, applicants for loans need not be members of, or depositors with, the society.

Terminating Societies: These societies are those which, by their rules, are to terminate at a fixed date, or when a result specified in their rules is attained. Societies issue members one class of share, and require equated monthly instalments towards share capital from members; when a member borrows to build (and only a member may borrow) he is required to pay additional equated monthly instalments, such addition constituting interest only. The regular instalments in respect of share capital are calculated to amount, with interest, to the nominal amount of the member's shares over the life of the society (say 26 or 30 years). If the member takes out shares with a nominal value of \$6,000, then his borrowing ceiling is set at \$6,000—in other words, the member takes out, in nominal share capital, the amount which he wishes to borrow for home-building. In effect, the member is contributing to a sinking fund for the liquidation of his loan. The terminating societies are termed 'co-operative'.

The following summarises the transactions of the permanent building societies in Tasmania:

Permanent Building Societies

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
	no.	no.	no.	no.	no.
Operating Societies	5	4	4	4	6
Investing Shareholders	7,100	7,570	8,460	8,800	10,600
Borrowers	4,647	4,705	5,000	5,360	5,550
	\$'000	\$'000	\$'000	\$'000	\$'000
Loans made	5,640	4,323	5,338	8,098	7,651
Loans Repaid	2,556	2,647	3,032	3,643	4,786
Deposits Received (a)	7,113	7,800	8,330	11,651	14,185
Deposits Withdrawn	6,031	7,014	7,527	10,261	12,913
Liabilities—					
Paid-Up Capital and Subscriptions	6,668	7,722	9,155	10,831	13,226
Accumulated Profits, Reserves	771	869	959	784	784
Deposits	9,396	10,168	11,550	13,627	14,898
Other	937	756	359	1,498	944
Total	17,772	19,514	22,024	26,740	29,852
Assets—					
Loans on Mortgage	16,489	18,157	20,463	24,918	27,783
Other	1,283	1,357	1,561	1,822	2,069
Total	17,772	19,514	22,024	26,740	29,852

(a) Includes interest credited to depositors' accounts.

In the following table, 'Loans from Government' and 'Loans Due to Government' refer principally to loan money made available under the Commonwealth-State Housing Agreement. Such funds are advanced to the societies through the Agricultural Bank which acts as agent for the Commonwealth Government in this field. The limit of an individual loan was raised from \$8,000 to \$9,000 in August 1969. The next table summarises the transactions of the co-operative housing societies in Tasmania:

Co-operative Housing Societies

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
	no.	no.	no.	no.	no.
Operative Societies	49	53	r 63	69	75
Shareholders	1,182	1,281	1,417	1,634	1,716
Borrowers	948	1,059	1,193	1,298	1,397
	\$'000	\$'000	\$'000	\$'000	\$'000
Loans Made to Borrowers ..	805	1,102	1,000	r 1,652	1,088
Loans Repaid by Borrowers ..	143	251	271	404	440
Loans from Government ..	378	799	693	1,277	1,014
Repayments to Government ..	130	215	277	393	419
	\$'000	\$'000	\$'000	\$'000	\$'000
Liabilities—					
Share Subscriptions	342	433	525	630	738
Reserves	98	150	198	249	316
Loans due to Government ..	3,204	3,764	4,183	5,067	5,663
Loans due to Other Lenders (a)	1,838	1,984	2,112	2,330	2,224
Other	20	(b) 58	(b) 72	(b) 96	(b) 107
Total	5,502	6,390	7,089	8,370	9,048
Assets—					
Loans on Mortgage	5,364	6,201	6,930	8,178	8,827
Other	138	189	160	192	221
Total	5,502	6,390	7,089	8,370	9,048

(a) Includes bank overdrafts for day-to-day running of societies.

(b) Includes accrued interest on loans; such interest was previously included in the two 'Loans' items immediately above.

Co-operative Societies

The next table summarises the financial transactions of societies registered under Tasmanian law as co-operative industrial societies; excluded are co-operative credit societies which are dealt with in a subsequent section.

Co-operative Societies

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
	no.	no.	no.	no.	no.
Societies	14	14	15	16	16
Shareholders	4,269	4,399	5,252	5,575	5,705
	\$'000	\$'000	\$'000	\$'000	\$'000
Sales	6,538	6,980	9,533	10,142	10,081
Less Cost of Goods	5,516	5,885	8,073	8,429	8,411
Trading Profit (a)	1,022	1,096	1,459	1,714	1,669
Add Non-Operating Receipts (a)	906	907	1,066	1,068	1,198
Less Expenses—					
Wages and Salaries	568	580	677	783	781
Interest	93	104	116	125	129
Administration	42	46	61	53	245
Other	1,046	1,089	1,373	1,576	1,478
Net Surplus	179	184	298	244	234
Dividends Paid	47	44	52	18	51

(a) Commissions, discounts, services, etc.

The next table shows the assets and liabilities of the societies:

**Co-operative Societies—Assets and Liabilities at End of Year
(\$'000)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Liabilities—					
Paid-up Capital	1,107	1,119	r 1,190	1,219	1,221
Accumulated Profits	306	458	r 527	496	566
Reserve Funds	167	352	427	521	585
Loans and Bank Overdraft ..	1,580	1,927	2,095	2,182	2,082
Sundry Creditors	1,106	925	1,446	1,553	1,647
Other	105	136	175	288	242
Total Liabilities	4,371	4,917	5,860	6,258	6,342
Assets—					
Fixed	1,410	1,541	1,957	2,025	2,019
Stock on Hand	774	831	937	996	961
Sundry Debtors	1,754	2,073	2,478	2,736	2,393
Other	434	473	487	501	969
Total Assets	4,371	4,917	5,860	6,258	6,342

Co-operative Credit Societies

Description

The co-operative credit societies (credit unions) are registered under the *Co-operative Industrial Societies Act 1928*. Most credit unions have been established by trade unions (e.g. those serving teachers, hospital employees, etc.) and by church groups. Members contribute capital by taking out shares and making deposits.

Transactions

The following table shows the societies' annual transactions:

Co-operative Credit Societies

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
	no.	no.	no.	no.	no.
Operating Societies	13	13	16	r 19	19
Shareholders	3,631	4,622	5,738	r 8,696	10,428
Borrowers	2,190	2,790	3,284	4,563	5,349
	\$'000	\$'000	\$'000	\$'000	\$'000
Loans Made	1,026	1,068	r 1,570	r 2,268	2,666
Loans Repaid	(a) 703	(a) 866	1,054	r 1,462	1,757
Deposits Received (b)	767	994	1,475	r 2,062	3,430
Deposits Withdrawn	409	660	974	r 1,363	2,508
Liabilities (at End of Period)—					
Paid-Up Capital	30	40	49	71	89
Reserves, Accumulated Profits	11	20	27	38	69
Deposits	941	1,274	1,775	r 2,475	3,397
Other	46	80	108	r 135	163
Total Liabilities	1,028	1,414	1,959	r 2,719	3,718
Assets (At End of Period)—					
Loans	983	1,290	r 1,805	r 2,611	3,518
Cash and Current Deposits ..	40	68	132	r 95	89
Other	5	56	r 23	r 14	111
Total Assets	1,028	1,414	1,959	r 2,719	3,718

(a) Includes interest payments on loans.

(b) Includes interest credited.

Pensions and Superannuation Schemes

Private Schemes

Surveys on an Australia-wide basis have revealed superannuation and/or retiring allowance schemes for employees in the private sector as follows: (i) schemes operated through life insurance offices, friendly societies and other organisations such as unit trusts; (ii) superannuation, pension and retiring allowance funds constituted by businesses; (iii) direct payments of pensions and/or retiring allowances by the employer.

Because of the restricted nature of the surveys, details are not available on a State basis. Australian totals revealed that businesses whose monthly pay-roll exceeded \$1,720 in 1962-63, had 242,000 employees covered by schemes operated through life insurance offices, and 297,000 employees covered by superannuation, pension and retiring allowance funds. Only one per cent of businesses surveyed made direct pension or retiring allowance payments, while 52 per cent of all businesses operated pension or retiring allowance schemes of one or more of the types described in the previous paragraph. Since 1963-64, annual surveys of selected large private pension schemes have been conducted.

Government, Local Government and Semi-Government Schemes

The levels of government operating in Tasmania are: (i) Commonwealth; (ii) State; (iii) Local; (iv) Semi-government authority. In the section that follows, any pension or superannuation scheme affecting employees of the Commonwealth Government or its instrumentalities is excluded; the principal fund so excluded is the Commonwealth Superannuation Fund for which State details are not available.

The inclusion of government superannuation and pension schemes as part of 'Private Finance' derives its logic from the fact that the funds involved do not belong to any government but are actually trust moneys held on behalf of contributors. Employees of the State Government contribute to separately constituted funds to which the State Government also makes contributions. Employees of local government and semi-government authorities are covered either by separately constituted funds or through schemes operated through life insurance offices.

The first pension and gratuity scheme for State public servants, introduced in 1860, was non-contributory and short-lived, being repealed in 1863. A contributory provident fund was established under the *Civil Service Act* 1900 but this scheme was also short-lived and made way for a contributory but State-subsidised scheme established under the *Public Service Superannuation Fund Act* 1905; a year before, a distinct fund had been established with similar principles to serve the teaching service. The *Superannuation Act* 1938 established a new fund to serve both public servants and teachers but pensions continued to be paid from the two funds established in 1904 and 1905 respectively; it was not until 1 July 1968 that the residual assets and pension liabilities of these older funds were transferred to the State Superannuation Fund Board. The assets transferred from the 1904 teachers' fund were \$52,990 and from the 1905 public servants' fund, \$17,103.

Separately Constituted Funds: In the table that follows, the operations of the following schemes have been combined and summarised: (i) State Superannuation Fund; (ii) State Teachers' Superannuation Fund; (iii) Police Provident Fund; (iv) Metropolitan Transport Trust—Retiring Allowance and Staff Pension Funds; (v) Marine Boards' independent schemes; (vi) University of Tasmania—Staff Superannuation, Invalidity Pension and Supplementary Pension Schemes; (vii) Hobart Corporation Retiring Allowance Funds; and (viii) Milk Board of Tasmania Superannuation Fund.

**State, Local Government and Semi-Government Pension and
Superannuation Schemes Operated Through Separately Constituted Funds**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	1,425	1,488	1,582	1,763	1,985
Employing Authorities ..	1,481	1,604	1,694	1,959	2,169
Interest, Dividends and Rent	962	1,078	1,177	1,307	1,450
Other Income	56	21	361	59	75
Total	3,924	4,193	4,815	5,088	5,679
Expenditure—					
Pensions	1,611	1,946	2,008	2,290	2,530
Lump Sum Payments—					
On Retirement or Death ..	83	128	122	194	273
On Resignation or Dismissal	305	394	350	399	445
Other Expenditure	13	19	52	114	25
Total	2,012	2,487	2,532	2,998	3,273
Total Assets (At End of Period)	18,765	20,474	22,736	24,829	27,241
Funds in Operation	no. 12	no. 12	no. 13	no. 14	no. 12
Contributors (At End of Period)	11,056	11,533	11,963	12,829	13,329
Number of Pensioners at End of Year	2,309	2,404	2,515	2,638	2,700

State Superannuation Fund: In the previous table, the principal fund included is the State Superannuation Fund contributed to by all permanent full-time employees of the Public Service, Teaching Service, Transport Commission, Hydro-Electric Commission and all hospitals subsidised by the State Government. (The Teachers' Superannuation Fund is now almost wound up and teachers contribute to the State Superannuation Fund.) The following table gives principal details of the State Superannuation Fund at 30 June:

State Superannuation Fund

Particulars	1967	1968	1969
Contributors no.	10,651	11,490	12,004
Pensioners—			
Ex-employees no.	2,458 {	1,459	1,518
Widows and Children no.		1,108	1,147
Accumulated Funds (a) \$'000	18,815	20,717	22,929

(a) Total assets less liabilities.

Police Provident Fund: The Police Provident Fund a *closed fund* included in the earlier table, had accumulated funds of \$2,652,915 at 30 June 1969. An amendment of the *Superannuation Act 1938* in 1963, provided that police officers appointed after 31 December 1963 were required to become contributors to the State Superannuation Fund. Police officers appointed prior to 1 January 1964 could continue as contributors to the Police Provident Fund or exercise an option, to become contributors to the State Superannuation Fund.

Schemes Operated Through Life Insurance Offices: A number of local government and semi-government authorities in Tasmania operate pension and superannuation schemes for their employees through life insurance offices. The next table combines and summarises the operations of such schemes. The following being the main authorities concerned: (i) Semi-government—marine boards, fire brigades, Metropolitan Transport Trust (Launceston and Burnie),

University of Tasmania, ambulances, Society for Blind and Deaf, Museum and Art Gallery, Botanical Gardens; (ii) Local Government—the cities and municipalities. Some authorities e.g. University, Metropolitan Transport Trust, etc. operate schemes on both bases, i.e. some through separately constituted funds, and others through life insurance offices.

Local and Semi-Government Pension and Superannuation Schemes Operated Through Life Insurance Offices

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	240	227	302	353	415
Employing Authorities ..	341	356	449	503	595
Surrenders	70	64	127	91	78
Death Claims	44	23	34	79	34
Matured Policies	48	35	77	63	117
Other Income	32	31	5	15	23
Total	776	736	993	1,104	1,260
Expenditure—					
Premiums Paid to Insurance Companies	518	521	750	855	1,010
Benefits—					
On Death or Retirement ..	119	76	118	143	155
On Resignation or Dismissal	75	64	114	80	64
Other Expenditure	13	12	9	9	13
Total	725	673	992	1,087	1,242
Funds in Operation	no. 24	no. 21	no. 20	no. 20	no. 20
Contributors (At End of Period)	1,850	1,915	2,098	2,200	2,392

Miners' Pension Fund

The Fund was established to provide for pensions to miners upon retirement or when incapacitated by injury, etc. and, in certain circumstances, to widows and dependants. Contributions to the Fund are made by the State Government, mine owners and miners. Details are as follows:

Miners' Pension Fund

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	4	2	2	2	3
State Government	30	30	30	30	30
Mine Owners	14	9	8	9	11
Interest, Dividends and Rent	15	14	12	11	10
Other Income	1	..	..	..	..
Total	64	55	53	52	54
Expenditure—					
Pensions	73	71	71	67	69
Other Expenditure	11	5	3	2	3
Total	84	76	74	70	71
Assets (At End of Period) ..	270	243	222	205	187
Contributors (At End of Period)	no. 55	no. 61	no. 52	no. 58	no. 58
Pensioners (At End of Period) ..	162	154	157	155	153

At the end of June 1969, there were 88 retired miners and 65 widows and children receiving pension payments from this fund.

Until 1962-63, the State Government contributed an amount to match that of the mine owners, the employers' share being related to coal production. After actuarial investigation, it was decided to strengthen the Fund and an amount of \$30,000 was stipulated in amending legislation as the Government's maximum annual contribution. The maximum has since been paid.

The Parliament Pension and Superannuation Scheme

The Tasmanian Parliament, in common with the parliaments of the other States and the Commonwealth, operates a superannuation scheme for the benefit of members who retire or are defeated after having served a minimum qualifying period. Basic rate pensions for Tasmanian members are payable after 15 years' service, lesser rate pensions being calculated pro-rata to length of service expressed as a fraction of 15 years; if the fraction is less than $\frac{8}{15}$ (i.e. service less than eight years) then the member merely receives a refund of his contributions. The basic rate of full pension was the Hobart basic wage (as varied from time to time), but a member, by increasing his subscription from \$312 per annum to \$624, might contract to receive double the basic rate; provision also existed for subscription scales yielding $1\frac{1}{3}$ and $1\frac{2}{3}$ of the Hobart basic wage.

The abolition of the basic wage in June 1967 by the Commonwealth Conciliation and Arbitration Commission was not allowed to interfere with the scheme just described; the Tasmanian Parliament met this situation by making an Act to define what the basic wage should be for 1967-68 in any interpretation of the *Parliamentary Retiring Allowances Act*. In 1968, the Act was further amended to substitute a new formula for basic rate calculations. The formula is \$12.50 weekly plus 34.5 per cent of Australian average weekly earnings per employed male unit in each year ended March (as revealed by pay-roll tax returns). The formula, when applied in 1968, gave a close approximation to the basic wage current in State Wages Boards' determinations (\$34.40). In 1970 the formula gave a basic rate of \$39.54 compared with the current State Wages Boards' basic wage determination of \$36.80. The basic rate, calculated in this way, replaces the basic wage specified in the original Act.

For the ordinary member, the scheme is purely contributory and is not State-subsidised; however, provision exists for the payment from Consolidated Revenue of an additional pension at the rate of \$3,000 yearly to any person who has held the office of premier for not less than 15 years.

Transactions of the fund (Parliamentary Retiring Allowances Trust) are shown in the following table:

State Parliamentary Pension and Superannuation Scheme
(**\$'000**)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Income—					
Members' Contribution (a) ..	34	35	37	40	39
Government Contribution ..	3	3	3	3	3
Interest	4	4	3	2	2
Total	41	41	43	45	43
Expenditure—					
Pension Payments (b) ..	44	45	48	50	68
Other (incl. Refunds) ..	..	..	4	..	11
Total	44	45	52	50	79

State Parliamentary Pension and Superannuation Scheme—continued
(\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Total Assets (At End of Period)	69	63	54	49	14
Less Liabilities	3	1	1	2	3
Accumulated Funds	66	62	53	48	12

(a) Number of contributors throughout period, 54 (House of Assembly, 35; Legislative Council, 19). Contribution for basic rate pension compulsory.

(b) Number of pensioners at 30 June 1969: ex-members, 21; widows of ex-members, 11.

The fund and scheme just described is administered by a trust, consisting of the President of the Legislative Council, the Speaker of the House of Assembly and the Under Treasurer, all *ex officio*; the trust has the power to appoint its own secretary and has chosen for this office the manager of the Treasury's Superannuation Branch.

Chapter 12

TRADE, TRANSPORT AND COMMUNICATIONS

OVERSEAS AND INTERSTATE TRADE

Historical

The *Statistical Returns of Van Diemen's Land, From 1824 to 1839* contain an import-export table for the period 1824-1838; the following is an extract:

**'Value of Imports into, and Exports from, Van Diemen's Land
During the Years 1824 and 1825'**
(£) (a)

Country	Imports		Exports	
	1824	1825	1824	1825
Great Britain	50,000	59,935	10,000	9,224
British Colonies	10,000	18,416	4,500	14,613
Foreign States	2,000	9,810	..	..
Total	62,000	88,161	14,500	23,837

(a) Unit is sterling currency.

There is, in fact, a continuous series of total trade statistics dating from 1824 to 1909. Until the foundation of the Commonwealth in 1901, trade with other parts of Australia was recorded as originating from or being destined for 'British Colonies'; in other words, all Tasmanian sea trade was regarded as overseas. From Federation to 1909, statistics were collected and compiled by the newly formed Commonwealth Customs Department for *all* sea trade, but since 1910 only direct *overseas* trade has been recorded by the Customs. In an island State, it became apparent that statistics of overseas trade alone were inadequate to record economic activity and, from 1922-23, the Government Statistician collected and published details of interstate trade; the collection of these data, now undertaken by the State Office of the Bureau of Census and Statistics, is carried out independently of the Customs Department and depends primarily on documents made available by Tasmanian Marine Boards and Harbour Trusts. In brief, there is a *total* trade series (1824-1909), an *overseas* trade series (1910 to 1921-22) and a *total* trade series (1922-23 to today).

In the immediate post-war period, there was a marked expansion of commercial aviation; the freight being carried was a component of interstate trade and steps were taken to record it, the first published figures appearing for 1949-50. Thus, the total trade of Tasmania is now recorded in three sections: (1) By Sea, Overseas; (2) By Sea, Interstate; (3) By Air, Interstate.

Value of Trade from 1824

Due to considerable and persistent changes in the purchasing power of money, it is extremely difficult to satisfactorily interpret any long-term statistical series expressed in money terms. The following table is therefore of

interest historically but subject to all the disabilities associated with long-term money series (including devaluations of Australian currency in 1930 and 1949):

Total Value of Trade by Sea and Air—Historical Summary
(£'000)

Year	Value of Imports				Value of Exports			
	By Sea		By Air	Total (a)	By Sea		By Air	Total
	Overseas	Interstate	Interstate		Overseas	Interstate	Interstate	
1824 ..	<i>n.a.</i>	<i>n.a.</i>	..	124	<i>n.a.</i>	<i>n.a.</i>	..	30
1860 ..	1,686	450	..	2,136	1,544	380	..	1,924
1880 ..	738	2,000	..	2,738	1,568	1,456	..	3,024
1900 ..	1,402	2,746	..	4,148	3,078	2,144	..	5,222
1910 ..	1,662	(b)	..	<i>n.a.</i>	1,040	(b)	..	<i>n.a.</i>
1919-20	1,626	(b)	..	<i>n.a.</i>	4,022	(b)	..	<i>n.a.</i>
1929-30	3,668	16,028	..	19,696	4,978	13,198	..	18,176
1939-40	3,188	21,780	..	24,968	4,852	20,954	..	25,806
1949-50	18,704	51,218	(c) 10,670	80,592	29,936	42,672	(c) 3,996	76,604
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1967-68	45,024	220,065	20,590	285,679	76,888	233,694	26,941	337,523
1968-69	37,509	241,398	21,050	299,958	102,061	265,476	25,825	393,362

(a) From 1965-66 the value of outside packages (approximately \$500,000 annually) is included in the value of overseas imports.

(b) Collection discontinued for period 1910 to 1921-22.

(c) First collected in 1949-50.

Note on Currency

The pre-Federation details were recorded in sterling; subsequent details were recorded in £A which had parity with sterling until 1930 when devaluation made £A1.25 equal to the £ sterling. In 1949, the £ sterling was devalued by 30.5 per cent and the £A was correspondingly devalued to preserve the 1930-1949 relativity. In 1966, Australia changed to dollar currency, with \$A equal to £A0.5. In late 1967, the £ sterling was devalued from an equivalency of \$A2.51 to \$A2.151. In the tables in this section, recorded figures have been converted to \$A by simply doubling the originals, *irrespective of their year of occurrence* and no account has been taken of changes in exchange rates.

Definition of Overseas and Interstate

Tasmanian goods destined for other countries may pass from Tasmanian ports direct or by transshipment through other Australian ports. Similarly, overseas goods may reach Tasmania direct or by transshipment through other Australian ports. Goods exported to other Australian States for transshipment overseas are recorded as *interstate* exports in Tasmanian trade statistics; goods imported from overseas by other Australian States and transhipped to Tasmania are recorded as *interstate* imports. The Australian State receiving the goods from or sending the goods to Tasmania is regarded as the State of destination or State of origin respectively.

By way of example, a new Japanese car transhipped in Melbourne and discharged in Tasmania is classified as an item of interstate trade and Victoria, not Japan, is classified as the place of origin. (Victorian overseas imports will include the entry of the vehicle from Japan.)

Effect of Motor Vehicles on Total Value of Imports and Exports

Import and export details of motor cars and commercial vehicles include tourist vehicles entering and leaving the State. The inauguration of the vehicular ferry service by the *Princess of Tasmania* in October 1959 resulted in a sharp increase in the transport of vehicles as suggested in the following table:

Motor Cars and Commercial Vehicles (a)—Value of Imports and Exports (\$'000)

Particulars	1959-60	1964-65	1965-66	1966-67	1967-68	1968-69
Imports	29,148	38,699	42,179	45,014	49,053	46,982
Exports	13,100	18,299	19,753	19,265	21,359	21,084

(a) As well as new and used vehicles, includes business and tourist vehicles moving to and from the State.

Since Tasmanians do not carry out motor vehicle assembly on any extensive scale (and certainly not for export), it follows that total import and export values for 1968-69 are both inflated by approximately \$21 million worth of vehicles, principally tourist, which entered and left the State. If vehicle exports are offset against imports, the net import figure will still include some used as well as new vehicles.

Source of Trade Statistics

Overseas trade statistics are compiled from documents obtained under the *Federal Customs Act* 1901-1968 and supplied to the Commonwealth Bureau of Census and Statistics by the Department of Customs and Excise. *Interstate sea* trade statistics are compiled from documents required under the authority of the *Marine Act* 1921 and made available to the Tasmanian Office of the Bureau by the various Marine Boards and Harbour Trusts. Statistics of *inter-state air* trade are compiled from returns furnished direct to the Tasmanian Office of the Bureau by all those who use this medium for the transportation of goods in commercial or industrial operations.

Values

The cost of importing goods into any country will theoretically contain four elements:

- (i) The 'original' price at door of factory, warehouse, etc.
- (ii) The cost of delivering goods to the ship 'free on board'.
- (iii) Sea freight and associated charges between ports.
- (iv) Cost of delivery from port to buyer.

Trade statistics base values on the first two elements but exclude the third and fourth, as set out in the following definitions:

The basis of value for overseas imports is 'transaction value, actual (*f.o.b.*)' or 'domestic value (*f.o.b.*)' if higher. Overseas exports are valued *f.o.b.* at the Australian port of shipment as follows: (i) for goods sold before export—the price at which the goods were sold; or (ii) for goods shipped on consignment—the current price offering for similar goods of Australian origin in the principal markets of the country to which the goods were despatched. Inter-state imports and exports are valued *f.o.b.* at the port of shipment.

Tasmanian Ports

Although there are nine port authorities (known mainly as marine boards or harbour trusts) in Tasmania, overseas trade is restricted to the ports of Hobart, Launceston, Burnie, Devonport and Stanley. (Exports of iron ore from Port Latta, which falls within the jurisdiction of the Circular Head Marine Board, are credited to Stanley.) The names of ports in subsequent tables refer to the towns in which the controlling marine boards are located. Thus 'Hobart' includes Port Huon; 'Launceston' includes Bell Bay and Beauty Point, etc.; 'Stanley' includes Port Latta; 'Currie' includes Naracoopa; and 'Lady Barron' includes Whitemark.

Total Trade of Tasmania

The following table shows Tasmanian total trade and its components in recent years:

Total Trade (\$'000)								
Year	Imports				Exports			
	By Sea		By Air	Total Imports	By Sea		By Air	Total Exports
	Overseas	Interstate	Interstate		Overseas	Interstate	Interstate	
1958-59	26,374	121,138	19,718	167,230	43,932	114,424	17,584	175,940
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1960-61	37,208	141,086	19,356	197,650	42,588	143,036	21,944	207,568
1961-62	26,788	141,776	18,000	186,564	57,196	140,794	23,298	221,288
1962-63	35,746	150,620	18,158	204,524	66,792	146,454	21,602	234,848
1963-64	35,032	167,964	19,840	222,836	78,318	173,590	23,424	275,332
1964-65	35,717	170,963	20,819	227,499	87,315	193,371	25,770	306,456
1965-66	(a)43,585	192,732	21,123	257,441	92,007	212,785	25,575	330,367
1966-67	51,376	209,456	20,311	281,143	88,834	224,975	25,680	339,490
1967-68	45,024	220,065	20,590	285,679	76,888	233,694	26,941	337,524
1968-69	37,509	241,398	21,051	299,958	102,061	265,476	25,825	393,362

(a) From 1965-66, value of outside packages (approximately \$500,000) is included in the value of overseas imports.

It will be observed that interstate trade is the major element both in imports and exports. The next table shows the balance of trade (excess of exports over imports):

Balance of Trade (Sea and Air)

Year	Balance of Trade (Excess of Exports)		Year	Balance of Trade (Excess of Exports)	
	Total (\$'000)	Per Head of Mean Population (\$)		Total (\$'000)	Per Head of Mean Population (\$)
1957-58	14,288	43.03	1963-64	52,496	144.71
1958-59	8,710	25.72	1964-65	78,957	215.51
1959-60	29,248	85.00	1965-66	72,926	197.31
1960-61	9,918	28.33	1966-67	58,347	156.04
1961-62	34,724	98.32	1967-68	51,845	136.66
1962-63	30,324	84.66	1968-69	93,404	242.17

Overseas Trade by Sea

From the earliest days, the United Kingdom was Tasmania's main source of overseas imports. Up to 1967-68, it was also Tasmania's major overseas market. However, in recent years, trade with other countries has begun to assume greater importance and in 1968-69, the value of exports to Japan exceeded the value of exports to the United Kingdom for the first time. Details of Tasmania's trade with overseas countries for the past fifteen years are as follows:

Total Value of Trade by Sea With Overseas Countries
(\$'000)

Year	Value of Imports From—				Value of Exports To—			
	United Kingdom	United States of America	Japan	Other Overseas Countries	United Kingdom	United States of America	Japan	Other Overseas Countries
1954-55	13,050	2,405	499	14,305	16,600	5,915	645	14,363
1955-56	10,978	1,864	674	11,368	18,110	4,373	1,219	16,906
1956-57	11,368	2,497	415	13,484	17,780	3,870	2,016	21,337
1957-58	10,779	1,638	532	12,517	18,688	3,988	2,796	19,034
1958-59	8,686	1,626	512	15,550	20,090	4,018	2,102	17,722
1959-60	8,272	2,520	382	16,432	19,880	4,106	2,694	21,050
1960-61	12,960	4,252	1,150	18,846	14,422	3,850	3,344	20,972
1961-62	8,998	2,548	784	14,458	20,536	5,600	4,372	26,688
1962-63	8,840	5,708	1,604	19,594	22,590	6,910	3,968	33,324
1963-64	7,738	5,932	2,770	18,592	25,816	8,498	4,786	39,218
1964-65	7,777	7,954	3,593	16,393	30,872	12,707	4,760	38,976
1965-66(a)	9,935	8,014	5,673	19,963	26,067	14,398	7,970	43,572
1966-67	8,886	10,735	7,385	24,370	20,913	15,737	10,291	41,893
1967-68	13,357	6,835	5,374	19,458	20,219	9,566	9,005	38,098
1968-69	8,705	5,629	5,708	17,467	17,267	16,216	24,362	44,216

(a) From 1965-66, the value of outside packages (approximately \$500,000) is included in the value of overseas imports.

Principal Overseas Exports

Certain Tasmanian commodities are of great importance in the State's overseas trade. Two selected examples are given below:

Tasmanian Overseas Exports of Selected Commodities
(\$'000)

Country of Consignment	1964-65	1965-66	1966-67	1967-68	1968-69
APPLES (FRESH OR PRESERVED BY COLD PROCESS)					
Denmark .. .. .	..	14	354	468	417
Finland	103	259	141	110	197
Germany, West	2,564	5,367	1,936	2,736	2,232
Hong Kong	558	441	300	435	300
Ireland	86	189	84	143	246
Malaysia	(a) 444	(a) 249	99	r 76	84
Philippines	218	260	281	342	283
Singapore	(a)	(a) 242	588	511	694
Sweden	718	1,239	740	948	918
United Kingdom	7,549	8,764	5,550	r 6,553	5,740
Other Countries	523	1,632	311	r 334	258
'For Orders' (b) .. .. .	..	41	71	..	..
Total	12,763	18,697	10,455	r 12,656	11,369

Tasmanian Overseas Exports of Selected Commodities—continued
(*\$'000*)

Country of Consignment	1964-65	1965-66	1966-67	1967-68	1968-69
REFINED ZINC					
Belgium-Luxembourg	603	886	..	..	232
China—Formosa	247	410	600	451	578
Mainland .. ..	..	..	..	..	1,164
Germany, Federal Republic of .. ..	..	..	52	..	250
Hong Kong	746	669	477	364	742
India	6,837	2,488	3,914	4,210	1,219
Italy	707	750	1,084	382	440
Netherlands	223	1,445	1,728	1,179	1,236
Pakistan	166	38	600	..	268
Philippines	1,225	1,486	716	1,609	1,444
Thailand	2,087	1,877	3,053	2,123	2,611
United Kingdom	7,800	5,758	3,342	1,640	2,890
U.S.A.	273	3,375	2,985	1,072	3,985
Vietnam, Republic of .. ..	..	..	..	..	368
Other Countries	1,067	1,159	1,313	668	623
Total	21,981	20,341	19,864	13,698	18,050

(a) Singapore included with Malaysia from 1 July 1964 to 30 September 1965.

(b) Country of consignment not determined at time of export.

Trade with Selected Countries

The principal countries of origin for overseas imports shipped direct to Tasmania in 1968-69 are shown, followed by the value in \$ million: U.K., 8.7; Japan, 5.7; U.S.A., 5.7; N.Z., 4.0; Canada, 2.3; Sweden, 2.2; West Germany, 1.9. The principal countries of destination for overseas exports shipped direct from Tasmania (value in \$ million) were: Japan, 24.4; U.K., 17.3; U.S.A., 16.2; Thailand, 5.0; West Germany, 4.7; Netherlands, 4.5; Italy, 4.3; France, 3.0; Hong Kong, 2.7.

The next table shows the trade of Tasmania with selected overseas countries; countries selected are those for which imports or exports approached or exceeded \$500,000 in any one of the three years under review, with the exception of countries for which figures are confidential. It should be noted that some goods are received from, or sent to, overseas countries by transshipment through other Australian States; no data are available on such transactions.

Trade With Overseas Countries
(*\$'000*)

Country of Origin or Destination	Imports (a)			Exports		
	1966-67	1967-68	1968-69	1966-67	1967-68	1968-69
Belgium-Luxembourg	96	159	233	339	1,985	841
Burma .. ..	..	..	..	783	300	297
Canada	1,903	2,507	2,265	371	230	342
China—Formosa	3	5	3	781	572	617
Mainland	525	342	453	806	..	1,164
Finland	559	251	223	141	110	199
France	404	412	164	3,067	2,417	2,986
Germany, West	2,004	2,187	1,898	2,743	3,357	4,743
Hong Kong	417	353	332	1,918	2,122	2,685
India	134	238	242	4,318	4,417	1,383

Trade With Overseas Countries—continued
(\$'000)

Country of Origin or Destination	Imports (a)			Exports		
	1966-67	1967-68	1968-69	1966-67	1967-68	1968-69
Italy	1,057	798	974	3,578	2,259	4,301
Japan	7,385	5,374	5,708	10,291	9,005	24,362
Kenya	1	1	1	382	387	443
Malaysia	8	5	13	1,713	1,893	1,666
Mexico .. ..	..	2	1	998	715	988
Netherlands	896	598	346	2,106	1,880	4,502
New Zealand	3,713	3,254	3,999	2,720	1,795	1,763
Norway	367	394	326	93	119	41
Philippines	2	1	..	1,461	2,340	2,366
Poland	6	8	5	1,158	326	837
Singapore	2	18	5	1,906	2,066	2,320
South Africa	187	271	227	531	451	379
Sweden	2,093	3,042	2,165	868	1,052	949
Switzerland	594	297	220	32	26	23
Thailand	2	37	5	5,437	4,397	4,958
United Kingdom	8,886	13,357	8,705	20,913	20,219	17,267
U.S.A.	10,735	6,835	5,629	15,737	9,566	16,216
Yugoslavia .. ..	..	..	..	619	271	479
Other	r9,397	r4,278	3,367	r2,952	r2,611	2,943
'For Orders' (b) .. ..	..	..	..	77	..	1
Total	51,376	45,024	37,509	88,834	76,888	102,061

(a) Value of outside packages included; 1966-67, \$682,000; 1967-68, \$650,000; 1968-69, \$474,000.

(b) Country of consignment not determined at the time of export.

Tasmanian and Australian Overseas Trade

It is necessary to take into account the value of outside packages, containers, crates, etc. in which goods are ordinarily imported from overseas, before comparing the values of the overseas trade of Tasmania and Australia. Such values have been omitted from all import tables in this chapter up to 1964-65 (except in the following comparative table), but they are normally included in trade statistics published by the Commonwealth Statistician. As from 1965-66, the value of outside packages is included in all Tasmanian import tables, now that a new commodity classification is in use. All export values in this chapter include the value of outside packages.

Value of Overseas Trade—Tasmania and Australia

Particulars		1964-65	1965-66	1966-67	1967-68	1968-69
IMPORTS						
Australia—	Total .. \$'000	2,904,703	2,939,492	3,045,341	3,264,473	3,468,505
	Per Head \$	257.54	255.59	260.09	273.71	285.00
Tasmania (a)—	Total .. \$'000	36,138	43,585	51,376	45,024	37,509
	Per Head \$	98.64	117.92	137.40	118.67	97.25
EXPORTS						
Australia—	Total .. \$'000	2,651,449	2,720,953	3,023,925	3,044,675	3,245,079
	Per Head \$	235.09	236.59	258.26	255.28	266.61
Tasmania—	Total .. \$'000	87,315	92,007	88,834	76,888	102,061
	Per Head \$	238.33	248.94	237.58	202.66	264.61

(a) Value of outside packages included: 1964-65, \$421,000; 1965-66, \$527,000; 1966-67, \$682,000; 1967-68, \$650,000; 1968-69, \$474,000.

The relatively low value of overseas imports per head of Tasmanian population is due largely to the transshipment of goods in other Australian ports. Since some goods go overseas from Tasmania by transshipment and are therefore *not* recorded as Tasmanian overseas exports, the export comparisons *per head* of Australian and Tasmanian populations suggest that the State plays an important role as an earner of export income.

Interstate Trade by Air

No data are compiled to show State of origin or State of destination for trade by air; most planes carrying commercial freights in connection with Tasmanian trade take off from or land in Victoria. The following is a summary of Tasmania's air trade since 1964-65.

Value of Interstate Air Trade
(\$'000)

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Imports	20,819	21,123	20,311	20,590	21,051
Exports	25,770	25,575	25,680	26,941	25,825
Total	46,589	46,698	45,991	47,531	46,876

Interstate Trade by Sea

As might be expected with Melbourne being the closest major port to Tasmania, the bulk of the island's interstate trade is transacted with Victoria. The next table shows the value of interstate sea trade with the Australian States. Imports include the value of goods imported into other States from overseas and transhipped to Tasmania; exports include the value of goods exported to other States for transshipment overseas.

Value of Interstate Sea Trade
(\$'000)

Australian State of Origin or Destination	Imports			Exports		
	1966-67	1967-68	1968-69	1966-67	1967-68	1968-69
N.S.W.	47,769	52,377	45,620	91,318	102,149	102,511
Victoria	135,534	140,733	165,474	107,266	107,765	137,776
Queensland .. (a)	5,911	(a) 5,158	(a) 9,582	9,946	8,428	9,097
S.A.	18,063	19,012	18,430	11,657	10,163	11,811
W.A.	2,179	2,786	2,291	4,787	5,190	4,281
Total	209,456	220,065	241,398	224,975	233,694	265,476

(a) Includes the value of manganese ore imported from the Northern Territory. Details are not available for separate publication.

Sea Trade of Tasmanian Ports

In the following table, the value of total imports and exports by sea is shown for each port:

**Total Value of Sea Trade Classified According to Port
(\$'000)**

Port	Imports		Exports		Total Sea Trade	
	1967-68	1968-69	1967-68	1968-69	1967-68	1968-69
Burnie	50,071	51,976	65,572	75,481	115,643	127,457
Devonport	61,038	66,301	55,108	56,013	116,146	122,314
Hobart	87,909	89,698	105,274	126,702	193,183	216,400
Currie	2,486	3,062	5,746	7,731	8,232	10,793
Launceston	62,194	64,768	59,659	73,568	121,853	138,335
Stanley	40	1,945	3,073	18,362	3,113	20,308
Strahan	1,351	1,152	15,935	8,629	17,286	9,781
Lady Barron .. ..	..	5	215	1,051	215	1,056
Total	265,089	278,907	310,582	367,537	575,671	646,444

The next table compares the proportion of total sea trade values attributed to each port (with 1958-59 as a base year):

**Total Value of Sea Trade—Port Proportions
(Per Cent)**

Port	1958-59	1964-65	1965-66	1966-67	1967-68	1968-69
Burnie	15.3	17.0	18.0	19.0	20.1	19.7
Devonport	5.6	21.0	19.7	19.6	20.2	18.9
Hobart	50.8	35.7	36.2	34.8	33.6	33.5
Currie	0.5	0.8	1.0	1.3	1.4	1.7
Launceston	23.5	22.9	22.4	22.7	21.2	21.4
Stanley	0.6	0.3	0.3	0.2	0.5	3.1
Strahan	2.4	2.3	2.4	2.3	3.0	1.5
Lady Barron .. ..	..	..	..	..	..	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

The drop in the proportion of sea trade attributed to Hobart since 1958-59 is related to the increasing use of 'sea-road' facilities available through the ports of Devonport, Launceston and Burnie. The vessels involved in the 'sea-road' service to northern and north-western ports are the *Princess of Tasmania*, the *Bass Trader* and the *Australian Trader* (from mid-1969). As from June 1964 similar facilities became available at Hobart when the *Seaway Queen* began a 'sea-road' service to Melbourne, followed by the *Seaway King* operating a Sydney service from September 1964. In January 1965, the *Empress of Australia* commenced a service with Sydney-Hobart-Sydney as one route and Sydney-Bell Bay-Burnie-Sydney as the other.

Air Trade of Tasmanian Airports

Although Tasmania has a number of airports, only six are used on a regular basis for interstate trade; four are located near Hobart, Launceston, Burnie and Devonport respectively and the remaining two on King and Flinders Islands respectively.

The following table shows the value of interstate air trade passing through Tasmanian airports:

**Total Value of Interstate Air Trade Classified According to Airport
(\$'000)**

Airport	Imports		Exports		Total Air Trade	
	1967-68	1968-69	1967-68	1968-69	1967-68	1968-69
Hobart	10,528	10,453	4,201	4,195	14,729	14,648
Launceston ..	6,090	6,503	21,617	20,541	27,708	27,044
Devonport ..	1,405	1,559	211	263	1,616	1,822
Wynyard (a) ..	1,670	1,692	170	169	1,839	1,861
King Island ..	608	585	576	531	1,184	1,116
Flinders Island ..	290	258	166	126	456	385
Total	20,590	21,051	26,941	25,825	47,532	46,877

(a) Including Smithton.

The percentage of the total value of air trade passing through each Tasmanian airport in 1968-69 was: Hobart, 31.2; Launceston, 57.9; Devonport, 3.9; Wynyard, 4.0; King Island, 2.4; Flinders Island, 0.8.

Commodities Carried by Air

It will be observed that the value of trade by air is about seven per cent of the value of total trade by sea and air combined. With regard to exports by air (valued at \$25,825,000 in 1968-69), the major group was 'Textiles and Yarns' valued at \$23,788,000; exports of all foodstuffs (meat, Southern Rock Lobster, fruit, etc.) accounted for a further \$882,000. For imports, there is a much greater range of commodities involved, the chief group being 'Clothing and Footwear' valued at \$12,784,000.

The value of imports by air has shown only a slow increase (from \$19.2m in 1959-60 to \$21.1m in 1968-69; the increase in the value of air exports has also been relatively slow (from \$20.8m in 1959-60 to \$25.8m in 1968-69). A possible explanation is the improvement in sea carriage techniques (roll-on roll-off vessels, container vessels, etc.) and improved shipping schedules.

Imports of Principal Commodities

The next table shows the value of the principal commodities imported into Tasmania by sea and air:

**Imports of Principal Commodities by Sea and Air—Values
(\$'000)**

Commodity	1966-67	1967-68	1968-69
Beer, Wine and Spirits	3,854	3,730	3,972
Aluminium Oxide	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>
Clothing and Accessories	13,708	13,189	13,453
Cocoa Beans and Cocoa Butter	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>
Footwear	3,076	3,042	3,431
Machinery—Electrical	12,780	15,031	13,887
Other	23,575	25,003	20,735
Metal Manufactures	8,646	8,090	8,465
Metals	16,901	14,499	13,760
Motor Vehicles—New	26,287	27,541	25,863
Other (a)	18,727	21,512	21,119

Imports of Principal Commodities by Sea and Air—Values—continued
(\$'000)

Commodity	1966-67	1967-68	1968-69
Ores and Concentrates—Zinc	6,800	5,267	6,160
Other	4,390	4,263	3,316
Paper and Paper Manufactures	8,487	8,667	8,819
Petroleum Products—Motor Spirit	7,299	8,169	8,502
Fuel Oils	8,262	9,060	11,354
Other	4,332	4,519	5,599
Pulp for Paper Making	6,590	5,734	6,346
Rubber Manufactures	4,342	4,748	4,960
Sugar, Refined	4,410	4,426	4,104
Textile Yarn and Fabrics	9,136	9,696	12,294
Tobacco and Cigarettes	13,258	13,275	13,670
Wheat	2,729	3,283	3,200
Wool, Greasy	3,159	3,544	2,313
Other (b)	r 70,395	r 69,391	84,636
Total Imports	281,143	285,679	299,958

(a) Mainly tourist and other motor vehicles imported as personal effects.

(b) Includes value details marked 'n.p.'.

The table that follows shows the quantities of the principal commodities imported and has been compiled, as far as this is practicable, to match the preceding table of values.

Imports of Principal Commodities by Sea and Air—Quantities

Commodity	Unit of Quantity	1966-67	1967-68	1968-69
Alcoholic Beverages—				
Ale, Beer and Stout	gal	566,994	454,272	550,302
Wine	gal	502,259	528,584	543,355
Spirits and Liqueurs—Overseas	pr gal	24,485	17,762	26,302
Interstate	gal	175,842	179,846	171,620
Aluminium Oxide	n.p.	n.p.	n.p.	n.p.
Cocoa Beans and Cocoa Butter	n.p.	n.p.	n.p.	n.p.
Iron and Steel	ton	115,757	100,351	92,509
Motor Vehicles—New	no.	13,217	14,659	13,550
Other (a)	no.	12,073	13,728	13,548
Ores and Concentrates—Zinc	ton	245,484	206,848	228,712
Other	ton	316,791	257,459	218,803
Petroleum Products—Motor Spirit	'000 gal	65,817	69,701	70,303
Fuel Oils	'000 gal	80,824	88,945	114,908
Pulp for Paper-making	ton	59,731	54,312	63,026
Sugar, Refined	ton	24,704	24,198	23,065
Tobacco and Cigarettes	'000 lb	2,346	2,344	2,393
Wheat	ton	47,312	52,998	51,234
Wool, Greasy	'000 lb	5,214	5,687	3,861

(a) Mainly tourist and other motor vehicles imported as personal effects.

Exports of Principal Commodities

The following table shows the value of the principal commodities exported from Tasmania by sea and air. Unfortunately, the largest item listed is 'Commodities Not Available for Publication' comprising several manufactured items listed in note (b) to the table, separate details of which cannot be published because of confidentiality considerations.

Exports of Principal Commodities by Sea and Air—Values
(\$'000)

Commodity	1966-67	1967-68	1968-69
Butter (including Butter Oil)	5,259	5,107	5,129
Fish (including Southern Rock Lobster)	2,517	2,708	3,511
Fruit—Apples (Fresh)	11,197	13,702	12,276
Pears (Fresh)	675	945	878
Processed	2,381	1,518	2,434
Hops	1,040	1,454	(a) 1,956
Meat—Beef and Veal	4,739	4,463	4,691
Lamb and Mutton	2,237	1,606	1,683
Other	963	972	1,615
Potatoes (Fresh)	1,468	2,049	1,457
Preserved Vegetables (including Dried)	17,563	15,376	14,874
Other Food and Drink (including Confectionery)	31,324	31,627	31,958
Fertilisers	2,077	607	1,455
Hides and Skins	3,372	2,101	3,214
Metal Manufactures (including Machinery)	7,290	7,768	6,883
Metals, Refined—Cadmium	1,151	1,191	1,386
Copper	11,433	15,063	8,820
Zinc	41,249	33,106	34,006
Iron .. .. .	..	1,281	17,126
Ores and Concentrates—Lead	4,969	5,650	6,164
Tin	2,539	6,049	11,538
Other	5,052	6,118	9,190
Motor Cars and Commercial Vehicles (b)	19,265	21,359	21,084
Pigments, Paints and Varnishes	9,433	11,312	11,218
Timber—Dressed	4,137	4,286	7,222
Undressed	9,535	9,205	8,107
Wool, Greasy	20,373	15,041	18,592
Woollen Manufactures	24,102	25,487	27,563
Commodities Not Available for Publication (c)	78,030	85,784	105,470
Not Elsewhere Included	14,120	r 4,589	11,862
Total Exports	339,490	337,524	393,362

(a) Excludes the value of a relatively small quantity exported overseas, details of which are not available for publication.

(b) Mainly tourist and other motor vehicles exported as personal effects.

(c) Commodities comprising this item are: aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard, and plywood.

The next table shows the quantities of the principal commodities exported and has been compiled, as far as this is practicable, to match the table of values.

Items in the 'Fish', 'Fruit' and 'Meat' categories have been added while no quantities for commodities in the 'Pigments, Paints and Varnishes' and 'Woollen Manufactures' are available for publication.

Exports of Principal Commodities by Sea and Air—Quantities

Commodity (a)	Unit of Quantity	1966-67	1967-68	1968-69
Butter (including Butter Oil)	cwt	179,906	176,998	181,949
Fish—Southern Rock Lobster	cwt	17,490	12,037	14,049
Other	cwt	27,112	35,076	38,033
Fruit—Apples	'000 lb	199,158	r 237,897	197,368
Pears	'000 lb	12,674	r 17,559	14,810
Preserved in Liquid	'000 lb	12,987	9,343	15,253
Pulped	'000 lb	3,845	1,639	2,621
Dried	'000 lb	762	367	761
Hops	'000 lb	1,397	1,831	(b) 2,445

Exports of Principal Commodities by Sea and Air—Quantities—*continued*

Commodity (a)	Unit of Quantity	1966-67	1967-68	1968-69
Meat—Beef and Veal	cwt	135,711	119,963	122,858
Lamb and Mutton	cwt	103,562	72,372	80,273
Pork	cwt	15,731	15,085	30,382
Potatoes (Fresh)	ton	27,590	29,229	27,915
Preserved Vegetables (including Dried) ..	'000 lb	85,917	82,941	87,082
Fertilisers	ton	48,133	7,419	26,341
Sheepskins	'000 lb	7,500	6,001	8,793
Other Hides and Skins (excluding Furred) ..	'000 lb	4,301	4,507	5,385
Metals, Refined—Cadmium	ton	272	256	298
Copper	ton	14,318	14,483	10,649
Zinc	ton	152,820	118,412	137,276
Ores and Concentrates—Lead	ton	26,495	24,624	27,597
Tin	ton	1,759	3,569	7,270
Motor Cars and Commercial Vehicles (c) ..	no.	12,362	13,537	13,489
Timber—Dressed	'000 sup ft	17,277	17,852	33,026
Undressed	'000 sup ft	62,170	60,045	49,583
Wool, Greasy	'000 lb	35,802	30,854	34,830

(a) Principal commodities not available for publication comprise: aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard, plywood and confectionery.

(b) Excludes a relatively small quantity exported overseas, details of which are not available for publication.

(c) Mainly tourist and other motor vehicles exported as personal effects.

Exports of Selected Commodities

The following table shows, in summary form, total exports of some important commodities for selected years since 1939-40:

Exports of Selected Commodities by Sea and Air

Commodity	Unit of Quantity	1939-40	1949-50	1959-60	1968-69
QUANTITY					
Butter (including Butter Oil) ..	cwt	55,428	42,886	154,789	181,949
Fresh Fruit (a)	'000 lb	163,964	125,468	177,876	212,178
Potatoes (Fresh)	ton	117,700	84,896	44,001	27,915
Hops	'000 lb	1,584	1,767	2,955	(b) 2,445
Wool, Greasy	'000 lb	9,092	9,101	27,977	34,830
Sheepskins	'000 lb	2,285	3,709	7,090	8,793
Refined Copper	ton	11,738	4,253	7,624	10,649
Refined Zinc	ton	70,909	80,704	113,853	137,276
Timber (Dressed and Undressed) ..	'000 sup ft	50,858	62,136	75,403	82,609
VALUE (\$'000)					
Butter (including Butter Oil) ..	..	742	1,278	5,390	5,129
Fresh Fruit .. .. .	..	2,270	4,348	9,490	13,154
Potatoes (Fresh) .. .. .	..	1,558	3,302	1,656	1,457
Hops .. .. .	..	236	610	1,928	(b) 1,956
Wool, Greasy .. .. .	..	1,376	6,202	15,254	18,592
Sheepskins .. .. .	..	186	816	2,078	2,148
Woollen Manufactures .. .. .	..	2,674	5,540	17,524	27,563
Refined Copper .. .. .	..	1,416	1,478	5,022	8,820
Refined Zinc .. .. .	..	2,856	9,964	22,922	34,006
Ores and Concentrates .. .. .	..	2,144	4,076	5,952	44,018
Timber (Dressed and Undressed) ..	..	1,238	2,930	8,952	15,329

(a) Unit of measurement changed; previous measure was bushel.

(b) Excludes a relatively small quantity exported overseas, details of which are not available for publication.

Further Information on Trade Statistics

In this chapter, it is only possible to give a broad outline of Tasmania's trade. The following cover the subject in greater detail:

The Trade and Shipping bulletin: this annual publication of the Tasmanian Office of the Bureau of Census and Statistics deals in detail with the State's interstate trade and includes an integration of interstate and overseas trade.

Overseas Trade: this annual publication of the Commonwealth Statistician gives considerable detail on the State's overseas trade.

RETAIL TRADE IN TASMANIA

Censuses of Retail Establishments

Retail censuses have been taken in respect of the years ended 30 June 1948, 1949, 1953, 1957, 1962 and 1969. The information collected in each census is extensive and provides details of retail trading in local government areas, in statistical divisions, and in special 'statistical retail' areas. The census information is also used as a bench-mark for designing a sample representative of all retail establishments for the purpose of quarterly surveys.

Details of the Census of Retail Establishments 1961-62 appeared in the Year Books of 1969 and 1970; this census, supplemented by the results of a special collection covering 1966-67, provided bench-mark data for the current series of quarterly retail surveys. The Census of Retail Establishments 1968-69 was conducted as part of a larger project, the Integrated Economic Censuses 1968-69, when four sectors of the economy were required to make simultaneous returns: Manufacturing; Mining; Wholesaling; Retailing. The results of these censuses are not yet available for publication.

Surveys of Retail Establishments

Quarterly estimates of the value of retail sales have been calculated from the September quarter 1950, inclusive, by means of sample surveys. The information collected quarterly in each survey is much less detailed than in the censuses and provides estimates for the State as a whole only. For 1966-67, a special collection was made from approximately 2,000 establishments, the aim being to revise the sample. When processing of information from the Census of Retail Establishments 1968-69 has been completed, the data will be used as the bench-mark for a new series of quarterly retail sales estimates.

A more detailed account of the 1968-69 Census of Retail Establishments has been included in Chapter 8 in the section headed 'Integrated Census'.

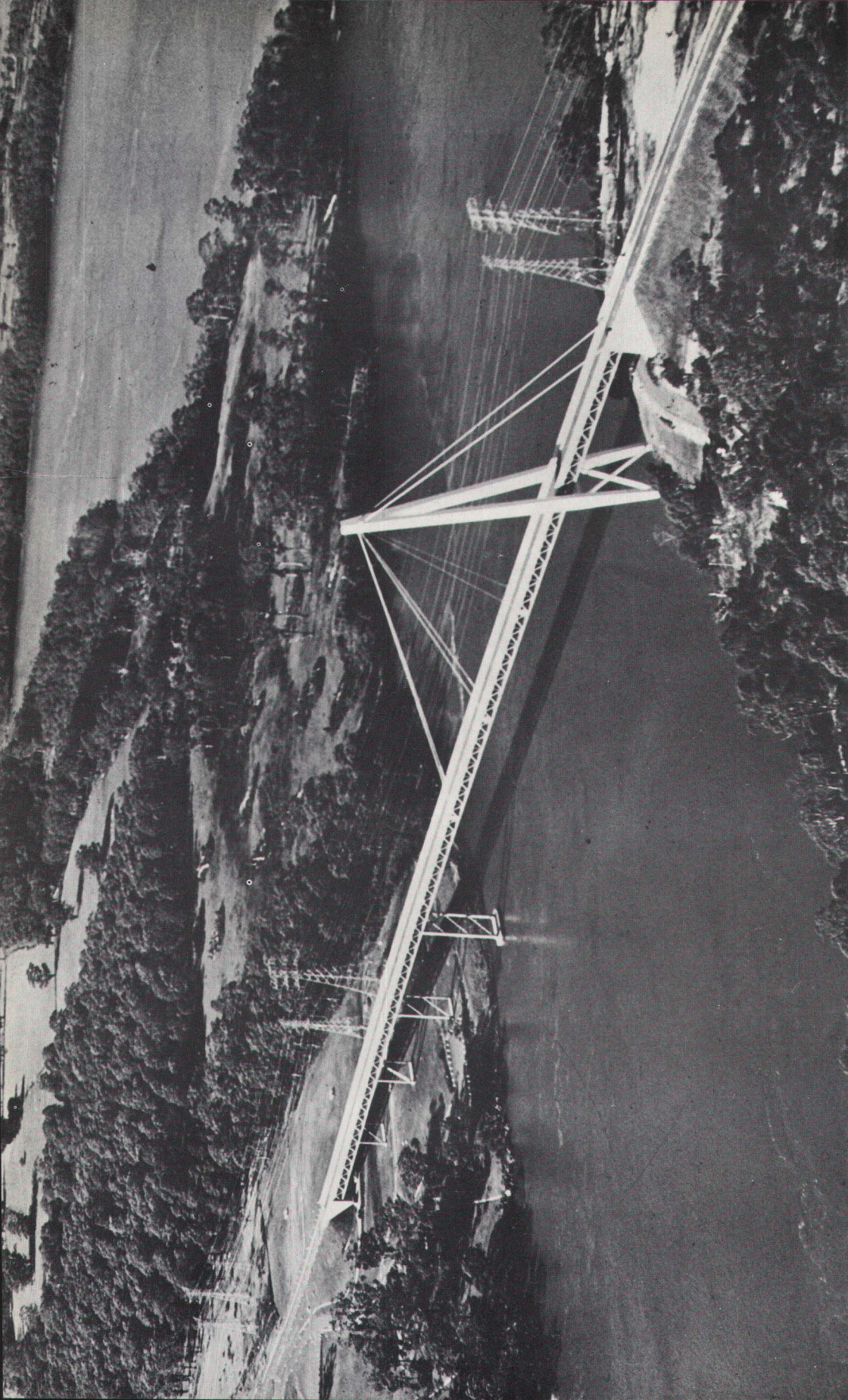
Quarterly Estimates of Value of Retail Sales

Each quarter, returns of retail sales are collected from a fraction (or sample) of all the retail businesses recorded in the most recent census of retail establishments, the fraction being selected to represent the field covered by the census. This sample is varied from time to time to make provision for 'new' establishments opening up, 'old' establishments closing down and 'old' establishments changing type ('old', in this context, relates to businesses as recorded at the most recent census of retail establishments). The basis of the present sample is the Census of Retail Establishments 1961-62 (with a major revision made after a special collection covering the year 1966-67). The information necessary to keep the sample representative of the field covered is gathered at annual intervals.



Convict-constructed stone warehouses, Salamanca Place

(Dept of Film Production)



Bateman Bridge on the Tamar River near Exeter

(Examiner)

From the returns made by the sample establishments, estimates are calculated quarterly of the total volume of retail sales, and also the total sales of broad groups of commodities. The following table presents estimated value of retail sales in Tasmania for annual periods as derived from the quarterly retail surveys.

Estimated Value of Retail Sales of Goods by Commodity Groups
(\$ million)

Commodity Group	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Groceries	31.50	33.51	35.20	36.50	r 37.30	40.70
Butchers' Meat	15.45	17.08	17.83	19.38	19.77	19.71
Other Food	20.57	21.88	22.72	24.22	r 26.02	28.14
Beer, Wine, Spirits	18.39	18.97	20.38	23.22	25.07	26.23
Clothing, Drapery, Piece Goods ..	32.75	34.83	35.51	39.24	42.24	41.80
Footwear	5.72	5.76	5.98	6.19	6.43	6.63
Domestic Hardware	4.33	4.35	4.51	5.07	5.59	5.81
Electrical Goods	11.41	11.30	11.25	11.73	12.42	12.19
Furniture, Floor Coverings ..	7.92	8.49	8.75	9.98	11.17	11.92
Chemists' Goods	8.21	9.31	9.81	10.59	10.90	12.05
Newspapers, Periodicals, etc. ..	5.93	6.37	6.80	7.38	8.05	8.82
Other Goods (a)	17.43	18.95	19.65	21.36	22.57	24.33
Total (excluding Motor Vehicles, etc).	179.62	190.80	198.39	214.87	227.53	238.33
Motor Vehicles, Parts, Petrol, etc.	70.69	75.74	77.42	79.92	r 86.13	86.35

(a) Includes sports goods, jewellery, cycles, flowers, plants, etc.

MARINE BOARDS AND HARBOUR TRUSTS

Introduction

Tasmania has a number of ports capable of accommodating overseas vessels; they are sited on the Derwent and Huon rivers in the south (Hobart and Port Huon); on the Tamar in the north (Beauty Point, Inspection Head and Bell Bay); on the Mersey (Devonport), in Emu Bay (Burnie), and at Port Latta, all in the north-west. All these ports provide depths of approximately 30 feet or more of water at berths; Port Latta provides a depth of 52 feet nearly a mile off-shore.

Interstate and intrastate trade passes through the main ports and is carried on as well through ports at Launceston, Strahan, Stanley, Ulverstone, Currie (on King Island) and Lady Barron (on Flinders Island).

This section deals primarily with the Marine Boards which control the harbours but a brief description is given of the main ports.

Port of Hobart

Location

The approach to the Derwent and the Port of Hobart is made through a very wide strait between Cape Queen Elizabeth (Bruny Island) and Cape Raoul (Tasman Peninsula), approximately 30 miles south-east from the city. The mouth of the Derwent, three and a half miles wide, lies 12 miles south-east of the port which is built upstream on the western bank in a U-shaped cove; the opposite bank lies one and a half miles away to the east at this point. The shores of the Derwent and the arms of the cove act as natural breakwaters.

Description

The present main port of Hobart is extremely compact, being U-shaped with only 2,000 feet or less separating the two arms. The southern arm is devoted to Princes Wharf with berths numbered one to four; the centre contains Elizabeth Street Pier and Kings Pier while the northern arm is made up of the Macquarie wharves with berths one to four and a tanker berth. Most wharves and sheds in the main port are of concrete construction.

In the 1960s, a major development was the establishment of special facilities for roll-on roll-off vessels. Princes Wharf No. 1 berth was converted into a specialised terminal with a drive-on ramp and vehicle marshalling area, the *Seaway Queen* and *Seaway King* first berthing there in June and August 1964 respectively. To accommodate the Sydney-Hobart vessel *Empress of Australia*, extensive land reclamation was carried out to the south of Princes Wharf No. 3 berth. The new facility, named No. 4 berth, involved a further wharf, a drive-on ramp, an extensive marshalling area and a terminal building. The *Empress* commenced service in January 1965. Other vessels operated by the Australian Coastal Shipping Commission (Australian National Line) also use this berth.

The most striking feature of the Port of Hobart is the ease with which large vessels can be brought to berth. Tides present no problem, the rise and fall being four feet six inches average, and dredging of approach channels has never been necessary.

Subsidiary Ports

In addition to the main port in the heart of the city, there are a number of subsidiary outlets serving the south of the State. Near Snug, on D'Entrecasteaux Channel, is the private wharf of the Electrona carbide works. Port Huon wharf, located on the west bank of the Huon River near Geeveston, is in the centre of the principal orcharding area and used mainly for fruit exports. Also based on the Huon River (at Hospital Bay) is the A.P.M. Ltd private wharf (for export of paper pulp). In the Derwent itself, two and a half miles upstream from the main port, is a tanker berth at Selfs Point where bulk petrol and oil are stored; tankers pass under the 150 feet high navigation span of the Tasman Bridge on their way.

The Selfs Point area is being developed as a petroleum products storage area and will ultimately replace the Macquarie wharf facility as Hobart's petroleum installation. The Macquarie wharf berth is to be redeveloped for conventional cargo handling. A mile upstream from Selfs Point is the Electrolytic Zinc Company Ltd private wharf at Risdon. At Boyer, located nearly twenty miles upstream from the main port, is the Australian Newsprint Mills Ltd plant. Newsprint is ferried to the main port by barge.

Administration

The Marine Board of Hobart is the authority controlling the main port of Hobart and Port Huon. When the Marine Board of Strahan ceased to function on 30 June 1970, Parliament extended the responsibilities of the Marine Board of Hobart to cover the control and operation of the Port of Strahan. The Board's jurisdiction covers the west, south and east coasts of Tasmania between the parallel of $41\frac{1}{2}^{\circ}$ South latitude and Cape Portland.

Works Programme

Main work for 1969 embraced: (i) construction of a jetty at Howden for the discharge of explosives; and (ii) completion of a modern slipway facility at the Domain Slipway capable of handling vessels of 1,000 tons.

The works programme for 1970 included: (i) construction of berthage facilities at Spring Bay to accommodate bulk carriers engaged in the export of woodchips to Japan; (ii) construction in Hobart of multi-storey office accommodation for the Board; (iii) reconstruction of the Bellerive Ferry Pier; (iv) extension of berthage facilities in Sullivans Cove off Hunter Esplanade at Macquarie Point; and (v) relocation of navigation lights in the D'Entrecasteaux Channel to provide more advantageous facilities for shipping.

Location

Port of Launceston

Launceston lies nearly forty miles upstream at the headwaters of the Tamar which discharges into Bass Strait between Low and West Heads; although the mouth of the Tamar is four miles wide, the river follows a sinuous course marked by many bends, and narrows to less than 300 yards in some stretches near the city. Tides are large, the rise and fall being from 10 feet to 12 feet according to location and silting occurs in the upper reaches which receive the discharge of the South Esk and North Esk Rivers.

Because of the limitations of the upper Tamar near Launceston, port activities are largely decentralised, the main operations located as follows:

- (i) Bell Bay: wharves include two tanker berths, a general cargo and bulk berth, a passenger berth, roll-on roll-off facilities, a special bulk berth serving Comalco Aluminium Ltd, and shortly, a berth to serve the woodchip industry. The roll-on roll-off facilities serve the *Empress of Australia* (from Sydney) and the *Bass Trader* and *Australian Trader* (from Melbourne). The Bell Bay site is on the eastern shore, some eight miles upstream from the mouth of the Tamar.
- (ii) Inspection Head: overseas berths on the western bank, opposite Bell Bay, for shipment of fruit, frozen meat and general cargo. Large cool storage and freezer facilities are provided.
- (iii) Beauty Point: bulk storage and special loading facilities for tallow as well as general cargo facilities. Location is on the western bank, half a mile upstream from Inspection Head.
- (iv) Kings Wharf Launceston: berths for inter and intrastate trade; facilities also include a graving dock and fitting out berths for small ship docking and repair.

Description

All berths in the lower reaches of the port have been constructed since 1951 and therefore provide modern facilities.

Channel and lighting improvements have allowed vessels of deeper draft to use the port and have permitted navigation of large vessels to be extended into the hours of darkness. By 1971, vessels of up to 55,000 tons deadweight will be able to use the facilities. Works programmes have been designed to ensure fast turn-round for the growing industrial complex at Bell Bay.

Administration

The port is administered by the Port of Launceston Authority whose jurisdiction covers the full length of the River Tamar, together with the northern coast-line westward to Badger Head and eastward to Cape Portland.

Works Programme

The channel improvement works continued during 1970 with the removal of Garden Island and deepening of isolated areas in the otherwise very deep entrance channel. A 17½-ton derrick crane has been installed at Kings Wharf

and a new 25-ton container crane has been erected at Bell Bay. The Bell Bay thermal power station berth has now been completed. Construction of the new woodchip berths at Long Reach was scheduled to commence during 1970.

With the current expansion of the Comalco works, the commissioning of the Bell Bay Thermal Station and the establishment of the woodchip industry, the development of the Port of Launceston during the next few years will result in a doubling of cargo tonnage handling capabilities by 1973.

Port of Devonport

Location

The Port of Devonport lies close inside the mouth of the Mersey River which, unlike the Derwent and the Tamar, is navigable for only a short distance. The Mersey has a rise and fall of tide approximating nine feet and a hydrographic survey has indicated a maximum tidal flow of 2.1 knots. The river was always a natural harbour for small craft but its development as a major port has required extensive dredging and engineering works, including elimination of the tidal bar.

Description

The original river mouth was approximately three-quarters of a mile wide but this has been narrowed to just over 400 yards by an anti-silting barrier built out into the sea from the eastern bank. Two terminals for roll-on roll-off and container cargo are located on the eastern bank; one is leased to the Australian National Line and the other is a common user facility. Both are serviced with modern facilities which incorporate stern loading ramps. A 25-ton portal travelling crane has been installed at the recently completed No. 2 berth. Extensive vehicle marshalling and cargo assembly areas are provided as well as a capacious passenger terminal building. Thousands of tourists and their vehicles pass through the terminal each year from the regular *Princess of Tasmania* service to and from Melbourne. The *Bass Trader* and *Australian Trader* also maintain a weekly service from the port.

On the western bank are four overseas and interstate berths for conventional vessels. These wharves are provided with storage sheds, cattle pens, oil pipe lines and silos for wheat and bulk cement, as well as one of the largest and most modern cold storage facilities in the State.

Works Programme

During 1970-71, the Marine Board undertook the widening and deepening of the entrance channel by removing a section of Police Point.

The Port of Burnie

Location

The ports of Hobart, Launceston and Devonport all lie within the shelter of rivers but the Port of Burnie, on Emu Bay, was built out into the open sea in the lee of Blackmans Point; immediately to the west of the Point is a beach on which breaks the short surf of Bass Strait which can produce very rough seas, the nearest land being the Victorian coast 200 miles to the north.

Description

The shelter necessary for all-weather use of the port is provided by a 1,250-foot breakwater anchored to Blackmans Point, and running out to sea with a south-east orientation. The wharves are thus protected by the Point

and by the breakwater from swells coming in from the west or north, the two quarters from which heavy seas are feared. Ocean Wharf is constructed immediately in the lee of the breakwater, the two structures appearing as one, and other berths are provided by piers parallel to the breakwater and lying further south.

Future development of the port could not be undertaken without the provision of further protection, and an island breakwater sited north-east from the end of Ocean Wharf has been constructed. The breakwater, consisting of concrete caissons 1,600 feet long, is orientated south-east and is calculated to give ample protection for up to 2,000 feet of berthage south of existing piers. An interesting feature is the use of the lee of the island breakwater for a tanker berth for both petroleum and sulphuric acid, the fuel being pumped to land along a submarine pipe.

In 1961, special facilities were provided to handle the roll-on roll-off vessel *Bass Trader* and the port is also used by the *Empress of Australia*, the *Australian Trader* and, when necessary, the *Brisbane* and *Sydney Trader*.

When the harbour expansion programme was started in 1960, the total volume of trade passing through Burnie was slightly less than 400,000 tons. The anticipated figure for 1969-70 was 1.1m tons and this is expected to increase to about 1.4m tons in 1970-71.

Much of this increased trade can be attributed to a normal increase in use of the port but two major factors, increases in unitised and containerised cargo handling and in handling of bulk metal concentrates will account for a great deal of the expansion.

The special roll-on roll-off facilities brought about a large increase in the volume of both unitised and containerised general cargo handled by the port.

Extensive development programmes by major mining industries on the West Coast have also had a large influence both on the amount of cargo handled and on the development of port facilities.

Large scale storage and handling facilities for metal concentrates have been provided within the port complex. The major factors which brought about the erection of these facilities were:

- (i) Commencement of shipment of copper concentrates from Queenstown; and
- (ii) Increased shipments of metal concentrates from Rosebery, Renison and Luina.

The major companies involved provided the facilities in the port area, while the Burnie Marine Board, at its own cost, had the necessary bulk cargo berth constructed as part of the same complex.

Although the full impact of the increased quantities scheduled to pass through the port will not be felt at least until the end of the 1970-71 financial year, use of the new facilities increased Board revenue substantially during 1969-70.

Works Programme

Major work undertaken during 1970 was the completion of a new bulk cargo berth on the reclaimed area to the south of Jones Pier, capable of handling up to 1,250 tons of mineral concentrates per hour.

Plans are being prepared for a modern general cargo berth on the southern side of the bulk cargo pier. The new berth is scheduled for completion by June 1971 with provision of associated facilities by the following year.

Port Latta (Circular Head)

A deep-water offshore terminal capable of accommodating bulk ore carriers of 60,000 to 90,000 tons capacity has been constructed at Port Latta for the export of iron ore pellets to Japan. In 1969-70, 1,942,000 tons of ore worth \$23,855,000 was exported from the port.

The loading facility consists of a four-foot wide conveyor belt which carries pellets to two swivel loaders located a mile offshore. Vessels moor in 52 feet of water to take on pellets, the system having a discharge capacity of about 3,000 tons per hour.

The port is specialised and designed primarily for export of iron ore pellets produced at Port Latta from ore mined at Savage River. Some of the raw materials for use by the Port Latta plant are imported through the adjacent port of Stanley. Port Latta is located in an area coming under the jurisdiction of the Circular Head Marine Board.

Constitution of Marine Boards and Harbour Trusts

Introduction

Relatively early in Tasmania's history, it was decided that the control and operation of any port was best put in the hands of citizens who had a local interest in its proper management, and, to this end, port administration was deliberately decentralised; the State Government, by legislation, defined the powers and duties of the new authorities it created but the detailed administration, including financial management, was then very much left to the boards and trusts. This is still the position today, government control relating mainly to the approval of borrowing programmes.

Establishment of Boards

Operation of Tasmania's chief ports ceased to be a direct function of the government of the colony in 1857 when legislation was passed to set up the marine boards of Hobart and Launceston. Each board consisted of five wardens; the mayor and the collector of customs were *ex officio* wardens, the remaining three members being appointed as nominees of the respective Chambers of Commerce. In 1867, the Governor was empowered to create other boards, such bodies to consist of three wardens appointed by the Governor; within a year, boards had been constituted under the titles Mersey, Circular Head and Table Cape.

Boards of Hobart and Launceston

The *Marine Boards Act* 1889 created a special electorate for the Hobart and Launceston boards, the nine wardens for each to be elected by ship-owners, importers and exporters. The respective collectors of customs were required annually to compile rolls of these users of the ports and the number of votes each elector could exercise was proportional to his financial interest; for example, an exporter of goods valued from \$400 to \$3,999 had one vote, \$4,000 to \$9,999 two votes, and over \$10,000, three votes. Importers received similar voting powers in proportion to the wharfage paid while ship owners

votes were proportional to tonnage of their vessels. It was further provided that three wardens should retire annually and the master warden be elected by board members. By an amending Act in 1895, the voting powers of importers were divorced from wharfage paid and placed on the same basis as those exercised by exporters.

The special electorate just described continues to elect the wardens of the Hobart Marine Board; the scale of values affecting the number of votes to be exercised by importers and exporters also remains unchanged. However, in the case of Launceston Marine Board, the system of the special electorate was abolished in 1902. All Launceston citizens on the rolls for the House of Assembly became eligible to cast single votes, a right extended in 1910 to citizens in the other municipalities bordering the Tamar. In 1916, with the adoption of the Hunter scheme for improvements affecting the whole length of the river, changes were made to increase the number of wardens by representatives from the bordering municipalities. The *Marine Act* 1921 reduced the number of wardens to five, restricted eligibility for standing as warden to citizens of Launceston and changed the voting qualification so that marine board electors had to be those qualified to vote at an election of aldermen for the City of Launceston. More recently, electors in Beaconsfield and George Town have again been given voting rights.

Constitution of Boards

The present system of appointing or electing wardens is summarised as follows:

Election or Appointment of Port Authorities

Authority	Number of Wardens	System of Election or Appointment of Wardens
Hobart Marine Board	9	Special electorate of ship-owners, importers and exporters
Port of Launceston Authority ..	5	Electors of Launceston, Beaconsfield and George Town as for municipal elections
Burnie Marine Board	8	} Municipal electors within proclaimed areas
Devonport Marine Board	11	
Circular Head Marine Board ..	5	
King Island Marine Board	5	
Flinders Island Marine Board ..	3	Municipal electors
Smithton Harbour Trust	5	Government nominees

Navigation and Survey Authority of Tasmania

The authority was constituted in 1963 to implement sections of the *Marine Act* 1921 relating to the safety of life and property at sea. Member marine boards contribute equally to the costs of running the Authority; the income is derived from survey and service fees.

Finances of Marine Boards and Harbour Trusts

The principal sources of revenue of the port authorities are shipping tonnage rates and import and export wharfage rates; other sources are charges for pilotage services and the hiring of equipment. Expenditure is summarised under the heading 'works and services' which includes the provision of ordinary port services (e.g. pilotage, tug assistance, etc.), the maintenance of the port (e.g. dredging, etc.) and the improvement of the port (e.g. new wharfs, new berths, etc.). To raise the additional funds required to finance port improve-

ments, the authorities borrow money subject to State Treasury approval, the Treasury acting on behalf of the Australian Loan Council and implementing its annual agreement as to the approved level of new semi-government authority loans.

The following table shows the combined revenue and loan account transactions for each authority:

Marine Boards and Harbour Trusts
Receipts and Expenditure—All Funds, 1968-69
(\$'000)

Particulars	Authority									Total
	Hobart	Launceston	Devonport	Burnie	Circular Head	King Island	Strahan	Flinders Island	Smithton	
Opening Balance..	2,339	350	1,003	2,250	12	41	7	29	5	16,036
Receipts—										
Revenue Account—										
Wharfage Charges	965	712	646	739	18	45	51	16	..	3,193
Hire of Plant and Equipment ..	415	242	77	168	..	3	..	..	..	905
Rents ..	4	202	90	79	3	..	1	..	..	380
Other Charges for Services (a) ..	265	769	215	153	38	4	4	2	..	1,450
Government Subsidy ..	30	..	..	..	..	..	..	..	..	30
Other Receipts (b)	111	54	46	104	4	1	..	1	..	322
Total ..	1,791	1,980	1,074	1,243	64	53	57	18	1	6,280
Loan Account—										
Loan Raisings ..	300	1,187	700	500	20	..	130	..	..	2,837
Other Receipts ..	..	..	..	..	..	..	..	..	..	..
Total ..	300	1,187	700	500	20	..	130	..	..	2,837
Total Receipts	2,091	3,166	1,774	1,743	84	53	187	18	1	9,117
Expenditure—										
Revenue Account—										
Works and Services ..	963	849	406	544	10	24	12	8	1	2,817
Interest ..	133	208	298	574	25	5	3	..	..	1,246
Redemption and Sinking Fund..	198	134	201	217	19	4	6	1	..	779
Administration ..	171	214	89	88	9	17	15	5	1	609
Other (c) ..	118	619	13	47	4	3	3	1	..	808
Total ..	1,583	2,024	1,007	1,470	68	52	39	15	2	6,259
Loan Account—										
Capital Works ..	300	891	1,401	1,844	25	4	109	..	..	4,574
Total Expenditure	1,883	2,914	2,408	3,314	92	56	148	15	2	10,834
Closing Balance..	2,547	602	369	679	4	37	46	33	3	4,319

(a) Includes dues, tonnage rates, pilotage, mooring and slipway fees, weighbridge revenue and charges for light, power, telephone, water, storage and cleaning.

(b) Includes receipts from sales of assets, interest on investments, and the net receipts of deposit, stores and superannuation accounts.

(c) Includes expenditure on insurance, workers' compensation, superannuation contributions, payroll tax, rents and rates.

The next table summarises the transactions of all Marine Boards and Harbour Trusts:

**Marine Boards and Harbour Trusts
Receipts and Expenditure—All Funds
(\$'000)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Opening Balance (a)	4,538	4,241	4,857	5,282	6,036
Receipts—					
Revenue Account	5,060	5,542	5,628	5,953	6,280
Loan Account—					
Loan Raisings	2,842	2,055	2,310	2,598	2,837
Other Receipts	104	37	5	28	..
Total Receipts	8,006	7,633	7,942	8,579	9,117
Expenditure—					
Revenue Account—					
Works and Services	2,255	2,557	2,711	2,272	2,817
Interest	792	928	1,018	1,149	1,246
Redemption & Sinking Fund	509	576	627	771	779
Administration	408	465	460	544	609
Other	1,050	622	517	696	808
Total	5,014	5,148	5,333	5,433	6,259
Loan Account—					
Capital Works	3,290	1,846	2,184	2,395	4,574
Total Expenditure	8,304	6,994	7,518	7,829	10,834
Closing Balance	4,240	4,880	5,282	6,032	4,319

(a) Balance brought forward sometimes revised after audit.

Loan Debt and Borrowing

The loan debt of the Marine Boards and Harbour Trusts has increased substantially in recent years. The following table shows the growth of this debt in total and gives individual details for the four principal authorities:

**Marine Boards and Harbour Trusts
Loan Debt of Principal Authorities At End of Year
(\$'000)**

Authority	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Hobart	2,866	2,700	2,527	2,559	2,658	2,760
Launceston	2,215	2,783	2,888	2,995	3,341	4,399
Devonport (a)	3,415	3,886	4,142	4,734	5,258	5,766
Burnie	5,984	7,473	8,766	9,740	10,443	10,782
Other	257	260	295	334	549	(b) 669
State Total	14,737	17,102	18,617	20,361	22,249	24,376

(a) Includes debt of Ulverstone Harbour Trust, the port having been taken over by Devonport Marine Board from 1 January 1963.

(b) Comprised Circular Head, \$438,000; King Island, \$87,000; Strahan \$144,000. Flinders Island Marine Board and Smithton Harbour Trust had no debt.

The next table shows a summary of annual borrowings and analyses the aggregate debt according to creditor:

**Marine Boards and Harbour Trusts
Loan Raisings, Loan Debt and Sinking Funds
(\$'000)**

Year	Loan Raisings During Financial Year			Loan Debt at End of Financial Year			Total of Sinking Funds at End of Financial Year (a)
	From State Govt	From Other Sources	Total	To State Govt	To Other Creditors	Total	
1958-59	1,125	1,125	22	6,723	6,745	..
1959-60	1,552	1,552	20	8,019	8,039	..
1960-61	1,560	1,560	18	9,280	9,298	..
1961-62	1,930	1,930	16	10,877	10,893	7
1962-63	2,167	2,167	..	12,671	12,671	24
1963-64	2,631	2,631	..	14,737	14,737	53
1964-65	2,842	2,842	..	17,102	17,102	85
1965-66	2,055	2,055	..	18,617	18,617	124
1966-67	2,310	2,310	..	20,361	20,361	182
1967-68	2,598	2,598	..	22,249	22,249	247
1968-69	2,837	2,837	..	24,376	24,376	320

(a) Sinking funds maintained by boards and trusts for debt redemption purposes.

SHIPPING AT TASMANIAN PORTS

System of Record

The shipping statistics contained in this Section were compiled on a new basis from 1 July 1966 and are not fully comparable with statistics published for previous periods. Prior to this date, shipping statistics were compiled from details assembled and supplied by the Department of Customs and Excise and by State Marine Boards. Since 1966-67, Tasmanian shipping statistics have been compiled from details submitted by shipping companies or their representatives, through the Department of Customs and Excise, for each arrival and each departure of a vessel. Not all vessels which arrived at, and departed from, ports in Tasmania are included in the new series of shipping statistics; the following are now excluded:

- (i) Naval vessels.
- (ii) Yachts and other craft used for pleasure.
- (iii) Foreign fishing vessels that neither load nor discharge cargo.
- (iv) Australian-registered fishing vessels operating from Tasmanian ports.
- (v) Geographical, seismic and oceanographic survey vessels.
- (vi) Offshore oil drilling rigs and vessels servicing them.
- (vii) Vessels of 200 registered net tons and under.

Movements of Vessels

The inward and outward movements of vessels using Tasmanian ports are classified according to the type of voyage and not according to the type of vessel. Each movement of a vessel is allocated to one of the following:

- (i) overseas direct,
- (ii) overseas via other State,
- (iii) interstate direct,
- (iv) overseas via port in Tasmania,
- (v) interstate via port in Tasmania,
- (vi) intrastate.

The first three classifications (overseas and interstate movements) give an unduplicated total for Tasmania. The inclusion of the other three classifications (intrastate or coastal movements) reflect the volume of shipping arriving at, or departing from, individual ports in Tasmania.

Tonnage of Vessels

The tonnage of a vessel may be expressed as: (i) gross tonnage; (ii) net tonnage; (iii) deadweight tonnage. The concept used in the following tables is *net tonnage* which is expressed in units of 100 cubic feet (i.e. 100 cubic feet equals one ton) and represents the volume of enclosed space which can be utilised for cargo or passengers.

Overseas and Interstate Shipping

The following tables show the number of vessels entering Tasmanian ports and their net tonnage. The details are restricted to entries classified as overseas and interstate movements and exclude coastal movements of vessels.

Shipping—Overseas and Interstate
Vessels Entered Ports in Tasmania, 1968-69

Port of Entry	Overseas				Interstate Direct		Total Vessels Entered	
	Direct		Via Other State					
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
Hobart ..	48	197	38	198	404	980	490	1,375
Burnie ..	4	13	52	252	368	601	424	866
Currie ..	..	..	1	6	2	..	3	6
Devonport ..	3	4	6	29	426	705	435	738
Lady Barron..	..	..	..	..	11	5	11	5
Launceston ..	7	18	36	181	314	969	357	1,168
Stanley ..	19	347	1	6	16	102	36	455
Strahan ..	..	..	..	..	39	30	39	30
Total ..	81	580	134	672	1,580	3,393	1,795	4,645

Shipping—Overseas and Interstate: Summary
Vessels Entered Ports in Tasmania (a)

Year	Overseas				Interstate Direct		Total Vessels Entered	
	Direct		Via Other State					
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
1959-60 ..	50	162	185	867	1,073	1,258	1,308	2,287
1960-61 ..	60	218	194	856	1,100	1,472	1,354	2,546
1961-62 ..	72	268	238	1,099	1,223	1,675	1,533	3,042
1962-63 ..	83	289	331	1,447	1,200	1,739	1,614	3,474
1963-64 ..	81	275	296	1,353	1,131	1,719	1,508	3,346
1964-65 ..	83	281	238	994	1,151	2,136	1,472	3,412
1965-66 ..	123	331	264	1,092	1,258	2,464	1,645	3,887
1966-67 ..	87	321	160	715	1,437	3,049	1,684	4,085
1967-68 ..	67	252	146	635	1,463	3,215	1,676	4,102
1968-69 ..	81	580	134	672	1,580	3,393	1,795	4,645

(a) From 1966-67, not fully comparable with previous years: see beginning of this section for explanation.

The following table has been compiled to show the country of registration of vessels entering all ports in Tasmania. The number of vessels and net tonnage figures shown in this table cannot be added to arrive at a State total as some vessels may have called at two or more ports within the State during the same voyage and are therefore subject to double, triple, etc., counting.

Country of Registration of Shipping
Vessels Entered Tasmanian Ports—Overseas, Interstate and Intrastate

Country of Registration	Vessels Entered Tasmanian Ports					
	1966-67		1967-68		1968-69	
	Number	Net Tons	Number	Net Tons	Number	Net Tons
Australia	1,456	2,992,077	1,522	3,191,492	1,645	3,328,042
Bahamas .. ..	..	..	..	..	1	5,132
Bulgaria .. ..	..	..	..	..	1	4,103
Chile .. ..	..	..	1	3,282	..	..
Denmark	14	28,795	13	20,749	9	32,118
France	2	540	3	3,833	4	1,080
Germany, East ..	..	..	1	2,700	2	5,400
Germany, West ..	13	51,058	6	26,443	15	48,510
Gibraltar .. ..	..	..	1	3,148	..	..
Greece	8	48,013	7	38,586	10	97,923
Hong Kong	6	21,433	5	19,389	8	24,447
India	21	78,324	14	52,183	18	68,423
Indonesia .. ..	..	..	..	..	1	2,785
Israel .. ..	..	..	4	11,252	5	15,749
Italy	1	15,764	..	..	2	29,159
Japan	36	135,499	30	137,345	32	368,303
Liberia	5	17,350	8	44,225	18	153,200
Mexico	4	21,752	..	..	..	..
Netherlands ..	71	180,015	75	203,200	58	173,536
New Hebrides ..	..	..	..	..	1	225
New Zealand ..	39	67,086	33	62,376	36	63,485
Norway	32	160,734	28	153,562	26	146,092
Pakistan .. ..	..	..	1	3,082	..	..
Panama .. ..	..	..	2	9,212	3	10,920
Papua & New Guinea	..	..	2	1,034	..	..
Philippines ..	..	..	1	8,516	1	2,007
Poland	4	13,730	2	6,844	5	17,886
Singapore .. ..	..	..	..	..	2	7,262
Spain .. ..	..	..	..	..	2	4,055
Sweden	39	158,494	41	154,943	33	149,486
United Kingdom ..	215	1,043,820	183	876,156	166	854,622
United States of America ..	17	83,757	15	74,408	17	81,475
U.S.S.R. .. ..	..	..	..	..	1	5,158
Yugoslavia .. ..	..	..	..	..	2	7,808

The next table shows the number and net tonnage of vessels which entered individual Tasmanian ports during 1968-69. The names of ports in this table refer to the cities or towns in which the controlling Marine Boards are located. Thus, 'Hobart' includes Port Huon; 'Launceston' includes Bell Bay, Beauty Point and Inspection Head; 'Devonport' includes Ulverstone; 'Stanley' includes Port Latta; 'Currie' includes Naracoopa and 'Lady Barron' includes Whitemark. A State total of number of vessels entered and their net tonnage cannot be obtained from this table by adding the port totals.

**Shipping—Overseas, Interstate and Intrastate
Vessels Entered Tasmanian Ports, 1968-69**

Port (a) of Entry and Type of Service (b)		Vessels Entered					
		In Cargo		In Ballast		Total	
		No.	Net Tons	No.	Net Tons	No.	Net Tons
Hobart—	Overseas Direct ..	34	137,897	14	59,162	48	197,059
	Overseas via Other State ..	38	198,174	..	..	38	198,174
	Overseas via Port in Same State ..	12	74,132	..	..	12	74,132
	Interstate Direct ..	357	917,275	47	62,919	404	980,194
	Interstate via Port in Same State ..	22	77,307	..	..	22	77,307
	Intrastate ..	36	62,160	6	8,686	42	70,846
	Total Hobart	499	1,466,945	67	130,767	566	1,597,712
Burnie—	Overseas Direct ..	3	12,457	1	225	4	12,682
	Overseas via Other State ..	52	251,738	..	..	52	251,738
	Overseas via Port in Same State ..	12	45,371	..	..	12	45,371
	Interstate Direct ..	344	566,286	24	34,548	368	600,834
	Interstate via Port in Same State ..	80	380,113	..	..	80	380,113
	Intrastate ..	20	44,617	14	17,095	34	61,712
	Total Burnie ..	511	1,300,582	39	51,868	550	1,352,450
Devonport—	Overseas Direct ..	3	4,497	..	..	3	4,497
	Overseas via Other State ..	6	28,799	..	..	6	28,799
	Overseas via Port in Same State ..	1	1,337	..	..	1	1,337
	Interstate Direct ..	358	620,693	68	84,678	426	705,371
	Interstate via Port in Same State ..	19	89,139	..	..	19	89,139
	Intrastate ..	15	38,647	1	1,844	16	40,491
	Total Devonport	402	783,112	69	86,522	471	869,634
Launceston—	Overseas Direct ..	6	14,324	1	3,900	7	18,224
	Overseas via Other State ..	36	181,246	..	..	36	181,246
	Overseas via Port in Same State ..	6	30,293	..	..	6	30,293
	Interstate Direct ..	292	945,484	22	23,234	314	968,718
	Interstate via Port in Same State ..	31	59,467	..	..	31	59,467
	Intrastate ..	21	64,904	1	584	22	65,488
	Total Launceston	392	1,295,718	24	27,718	416	1,323,436
Stanley—	Overseas Direct ..	1	857	18	346,224	19	347,081
	Overseas via Other State ..	1	5,659	..	..	1	5,659
	Overseas via Port in Same State ..	2	8,272	..	..	2	8,272
	Interstate Direct ..	8	12,396	8	89,754	16	102,150
	Interstate via Port in Same State ..	7	42,773	..	..	7	42,773
	Intrastate ..	13	9,551	3	2,355	16	11,906
	Total Stanley ..	32	79,508	29	438,333	61	517,841

**Shipping—Overseas, Interstate and Intrastate
Vessels Entered Tasmanian Ports, 1968-69—continued**

Port (a) of Entry and Type of Service (b)		Vessels Entered					
		In Cargo		In Ballast		Total	
		No.	Net Tons	No.	Net Tons	No.	Net Tons
Strahan—	Interstate Direct ..	16	12,424	23	17,524	39	29,948
	Interstate via Port in Same State ..	3	2,412	..	..	3	2,412
	Intrastate .. ..	..	..	2	1,608	2	1,608
	Total Strahan ..	19	14,836	25	19,132	44	33,968
Currie—	Overseas via Other State	1	6,375	..	..	1	6,375
	Interstate Direct ..	..	..	2	488	2	488
	Intrastate	1	499	..	..	1	499
	Total Currie ..	2	6,874	2	488	4	7,362
Lady Barron—	Interstate Direct ..	..	..	11	5,489	11	5,489
	Intrastate	1	499	..	..	1	499
	Total Lady Barron	1	499	11	5,489	12	5,988

(a) See introduction to this table.

(b) Type of Service ('Overseas Direct', etc.) is defined under *Movement of Vessels* at the beginning of this section.

The following table shows, in summary form, the number and net tonnage of vessels which entered Tasmanian ports during the last three years:

**Shipping—Overseas, Interstate and Intrastate
Vessels Entered Tasmanian Ports**

Port (a) of Entry	1966-67		1967-68		1968-69	
	Number	Net Tons	Number	Net Tons	Number	Net Tons
Hobart	559	1,572,364	544	1,528,957	566	1,597,712
Burnie	536	1,388,653	548	1,386,734	550	1,352,450
Currie .. ..	..	..	1	5,535	4	7,362
Devonport ..	362	715,677	424	817,882	471	869,634
Lady Barron ..	..	..	..	..	12	5,988
Launceston ..	430	1,367,684	391	1,254,164	416	1,323,436
Stanley	25	19,103	32	69,640	61	517,841
Strahan	71	54,760	58	45,048	44	33,968

(a) See explanation in introduction to previous table.

Cargo Discharged and Shipped

Cargo handled at ports is recorded in terms of units of weight or units of measurement, depending on the basis on which freight is charged. A ton measurement is a unit of 40 cubic feet. As totals derived from conversion to a common weight or alternatively to a common volume would not be accurate, entries in each of the two units are recorded and published separately.

In the next table, details are given of the cargo handled at each port in Tasmania. The classification 'Overseas' and 'Interstate' relate either to the origin or destination of the cargo.

**Cargo Discharged and Shipped
Individual Tasmanian Ports, 1968-69**

Port	Overseas		Interstate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
DISCHARGED						
Hobart	126,742	22,128	602,236	153,372	728,978	175,500
Burnie	53,655	2,329	242,063	240,579	295,718	242,908
Currie	3,412	..	..	..	3,412	..
Devonport ..	3,524	9,422	160,879	394,874	164,403	404,296
Lady Barron ..	..	..	..	..	..	..
Launceston ..	42,767	13,112	672,908	172,164	715,675	185,276
Stanley	12,828	..	31,581	388	44,409	388
Strahan .. ..	..	..	15,211	..	15,211	..
Total	242,928	46,991	1,724,878	961,377	1,967,806	1,008,368
SHIPPED						
Hobart	113,426	177,463	347,470	104,304	460,896	281,767
Burnie	58,127	14,066	65,859	169,342	123,986	183,408
Currie .. ..	..	..	465	..	465	..
Devonport ..	8,782	11,805	203,869	367,925	212,651	379,730
Lady Barron ..	..	..	..	12,287	..	12,287
Launceston ..	30,736	29,788	135,335	136,697	166,071	166,485
Stanley	1,381,847	..	340	16,358	1,382,187	16,358
Strahan .. ..	..	..	51,474	..	51,474	..
Total	1,592,918	233,122	804,812	806,913	2,397,730	1,040,035

The following table gives a summary of overseas and interstate cargo discharged and shipped at Tasmanian ports:

**Cargo Discharged and Shipped
All Tasmanian Ports**

Year	Overseas		Interstate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
DISCHARGED						
1959-60	293,310	37,908	664,887	401,165	958,197	439,073
1960-61	367,419	26,222	768,627	500,747	1,136,046	526,969
1961-62	252,278	28,850	721,099	511,145	973,377	539,995
1962-63	300,978	45,926	1,051,247	438,537	1,352,225	484,463
1963-64	326,043	43,100	1,033,230	448,997	1,359,273	492,097
1964-65	388,777	72,437	1,015,197	597,335	1,403,974	669,772
1965-66 (a) ..	335,700	34,944	1,097,149	708,874	1,432,849	743,818
1966-67	372,748	40,878	1,483,292	837,703	1,856,040	878,581
1967-68	260,730	41,262	1,582,038	913,020	1,842,768	954,282
1968-69	242,928	46,991	1,724,878	961,377	1,967,806	1,008,368

Trade, Transport and Communications
Cargo Discharged and Shipped—continued
All Tasmanian Ports

Year	Overseas		Interstate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
SHIPPED						
1959-60	151,198	129,213	457,984	399,079	609,182	528,292
1960-61	104,709	137,949	382,678	568,776	487,387	706,725
1961-62	163,402	179,845	401,461	466,189	564,863	646,034
1962-63	203,877	141,149	583,379	468,374	787,256	609,523
1963-64	154,499	253,130	629,847	384,150	784,346	637,280
1964-65	195,393	198,461	661,928	517,931	857,321	716,392
1965-66 (a) ..	202,820	216,277	636,957	530,090	839,777	746,367
1966-67	220,169	184,336	619,556	669,670	839,725	854,006
1967-68	272,998	249,324	685,321	755,125	958,319	1,004,449
1968-69	1,592,918	233,122	804,812	806,913	2,397,730	1,040,035

(a) From 1966-67 not comparable with previous years; see beginning of this section for explanation.

TRANSPORT COMMISSION

Origin of Commission

The State railways operated at a considerable loss during the period following World War I and this difficulty was accentuated by the increasing use of commercial road transport. The 1938 report of the Commonwealth Grants Commission contained the following comment: 'A large State may conceivably stand the cost of duplicated transport, but it is obvious that Tasmania cannot. We believe that the Tasmanian Government appreciates this position and that it can only be met by initiative and decision'. At the time of this report, railways were controlled by a Minister, motor vehicle registration and licensing of drivers were Police Department functions and public vehicle licensing was administered by a Transport Committee drawn from several departments.

Following an enquiry, Parliament passed the *Transport Act* 1938 establishing a new authority headed by a Commissioner and two Associate Commissioners, the associates now being the General Manager of the Railways and the Administrator of Road Transport. This Act and subsequent amending legislation had the effect of creating an administrative authority unique in Australia because the management and control of all public transport, with minor exceptions, became the responsibility of one central authority. The government omnibus services in Hobart, Launceston and Burnie and the privately-owned Emu Bay Railway are the exceptions.

Functions of the Commission

The functions of the Commission are as follows:

- (i) the control and management of the Government railways;
- (ii) the regulation and licensing of commercial road transport (i.e. of 'public vehicles');
- (iii) the registration and taxation of motor vehicles and the licensing of drivers;

- (iv) the control and operation of the Bruny Island ferry service and the Flinders Island Shipping service;
- (v) the administration of regulations under the *Traffic Act* concerning road traffic control;
- (vi) the administration and control of State aerodromes;
- (vii) traffic engineering associated with the control of traffic;
- (viii) control and operation of an engineering plant (known as the 'tool annexe').

In brief, the Transport Commission emerges as a *business undertaking*, an *administrative body* and a *taxing authority*.

Control of Commission

The Commission, by Section 6 (2) of the Act, is absolutely free from political control except that the Minister for Transport may, under Section 33, appeal to the Governor if dissatisfied with decisions of the Commission. Section 34 allows the Governor, as a form of assistance to industry in certain cases, to direct the Commission to reduce freight charges but, to the extent that such direction causes a revenue loss, the Treasurer is obliged to reimburse the Commission; the formula for reimbursement requires either acceptance of the Commission's original charges as the economic cost of the service or substitution of the Auditor-General's calculation of the economic cost, should the level of the Commission's original charges be considered uneconomic by the Auditor-General.

Commission's Financial Operations

The revenue of the Commission comes from three main sources:

- (i) own business undertakings—railways, shipping services and an engineering plant ('tool annexe');
- (ii) taxation and licensing receipts—motor vehicle taxation and registration, drivers' licence fees and fees related to public vehicles control;
- (iii) grants from Consolidated Revenue.

The financial transactions of the Commission are summarised in the tables that follow. For simplicity of presentation, the transactions are arranged in two sets of accounts, firstly Trading and Profit and Loss, secondly Taxation, Licensing, etc. It should be noted that the net loss in the trading and profit and loss account for any year becomes a charge on Consolidated Revenue in the following year; also that the proceeds from motor taxation, registration, licensing, etc. are passed to Consolidated Revenue, the Commission being reimbursed the costs of collecting such revenues and the costs and expenses incurred in connection with the control of, and the provision of facilities for, motor traffic. A distinction is drawn, however, between public vehicle fees and public vehicle licensing; the latter charges are taken into the profit and loss account as an offset against net trading loss.

The amounts paid into Consolidated Revenue by the Commission are transferred by the Treasurer into the State Highway Trust Fund, thereby providing that taxes and charges levied on motorists and commercial road transport shall be devoted to road construction and road maintenance.

Transport Commission—Trading and Profit and Loss Account
(\\$'000)

Particulars	1966-67	1967-68	1968-69
REVENUE			
Railways	6,901	6,852	7,214
Road Transport Services	424	398	248
Marine Services	174	186	258
Tool Annexe	265	259	296
Land Tax	2,108	2,271	2,352
Public Vehicle Licensing (by Transfer)	78	79	77
Other Revenue	89	111	92
Net Loss (a)	882	1,224	1,185
Total	10,921	11,379	11,722
EXPENDITURE (b)			
Railways	8,611	8,980	9,300
Road Transport Services	410	400	252
Marine Services	222	229	318
Tool Annexe	239	241	273
General, including Administration	315	341	348
Interest	1,125	1,188	1,231
Total	10,921	11,379	11,722

(a) To be charged against Consolidated Revenue in following year.

(b) Provisions for depreciation included in each item (excluding interest).

The remaining transactions can be summarised as follows (road safety accounts are excluded):

Transport Commission—Motor Taxation Collection, Licensing, etc.
(\\$'000)

Particulars	1966-67	1967-68	1968-69
REVENUE			
Motor Tax	3,528	4,004	4,247
Public Vehicles Licensing, Fees, etc.	391	403	410
Registrations, Licences, etc.	1,048	1,080	1,150
Refunds of Stamp Duty .. .. .	..	..	—1
Stamp Duty on Vehicle Registrations .. .. .	..	217	344
Transfers from Consolidated Revenue—			
Road Transport Administration .. .. .	..	430	464
Traffic Engineering Section .. .. .	..	249	268
Total	4,967	6,382	6,882
EXPENDITURE			
Profit and Loss Account (Transfer) (a)	78	79	77
Paid to Consolidated Revenue (b)	4,068	5,660	6,107
Administration, Traffic Control, etc.	814	661	718
Total	4,960	6,401	6,901

(a) Receipts from public vehicle licensing paid into profit and loss account.

(b) Motor Tax and Public Vehicles Fees transferred from Consolidated Revenue to State Highways Trust Fund.

Annual Loss

Up to 1968-69, State land tax was taken as a revenue item in the profit and loss account, thus reducing the net loss. The tax was paid into Consolidated Revenue and then transferred to the Commission. In effect, the Commission received annually two grants from the State, firstly all collections of land tax and secondly, reimbursement of the previous year's net loss. The actual burden on Consolidated Revenue, over the last three years on this basis, has been: 1966-67, \$2,859,494; 1967-68, \$3,153,083; and 1968-69, \$3,575,502. In 1969-70 the transfer of land tax was discontinued and the Commission received a \$2.7m grant from the State Loan Fund. The accounts reveal that the Commission's net loss occurs principally in respect of railways but the case for continued subsidisation is argued on a number of grounds:

- (i) abandonment of all railway operations would still leave the State with liability for annual debt charges exceeding \$1,000,000;
- (ii) heavy bulk freights now carried by rail would rapidly break up present road surfaces if they were transferred to road haulage; considerable sums would have to be spent in increased roads maintenance or road improvements;
- (iii) for certain types of freight, rail transport is still considered more economical than road haulage; closing the railways might add appreciably to the costs of many primary and secondary producers.

The previous table shows the Commission's road transport services operating with an excess of revenue over expenditure but it should be noted that the item 'interest' is not allocated to the various functions. With interest taken into account, road transport services experienced a loss of \$23,044 in 1965-66 and \$10,961 in 1966-67. Parliamentary approval for continuance of these services could not be obtained and they ceased operating in December 1968.

Public Vehicle Licensing

The following types of licence are issued by the Commission to operators of public vehicles:

- Aircraft:* for aircraft used as public vehicles on intrastate journeys.
- Coach:* for vehicles used for the carriage of passengers and goods between places along a specified route.
- Omnibus:* for vehicles seating more than eight passengers and operating within a specified area.
- Cab:* for vehicles seating eight or less passengers and operating within a specified area (i.e. plying or standing for hire).
- Hire-Car:* for vehicles seating eight or less passengers and operating between any places in the State; also for the same vehicles standing or plying for hire within a specified area.
- Carrier:* for vehicles engaged in carriage of goods between places on a specified route.
- Cart:* for vehicles engaged in the carriage of goods within a specified area. (Despite the word 'cart', the licence applies to motor driven vehicles).
- Ancillary:* for vehicles engaged in the carriage of goods in the course of the trade or business of the owner (excluding farmers, general 'carters' and 'carriers'). Such licences apply to operation within a specified area.

Licences are issued for three-year periods for all public vehicles except those classed as ancillary or hire-car, in which case annual renewal is required. The decision of the Commission to grant or refuse a licence, or to impose conditions or restrictions on a licence, is subject to appeal to the Public Vehicle Licensing Appeal Tribunal. The factors considered by the Commission in issuing a licence include:

(i) suitability of the routes over which the applicant proposes to provide the service; (ii) the extent to which the needs of the proposed routes, traffic areas, or districts, are already served; (iii) the extent to which the proposed service is necessary or desirable in the public interest; (iv) the traffic needs of the district or traffic area, including provision of adequate and efficient services, the elimination of unnecessary and unremunerative services, and the co-ordination with rail of all forms of transport; (v) the condition of the roads over which the proposed service is to be provided; and (vi) the fitness of the applicant to hold a licence.

Public Vehicle Control

For the purposes of transport control, Tasmania is divided into eight traffic areas so designed that competitive operations of vehicles licensed for one area are confined to short hauls. From the earlier section on licensing, the following classification emerges:

- (i) licensed only for one traffic area: cabs, omnibuses, 'carts' and ancillary vehicles;
- (ii) licensed for specified routes: coaches and carriers;
- (iii) licensed for whole State: hire-cars.

Vehicles licensed for a specific traffic area cannot be used outside it without first obtaining a permit which is subject to an out-of-area fee as determined by the Commission. The *Traffic Act* 1969 provides for maximum permit fees, in relation to goods vehicles, of 0.4c per cwt of unladen weight for each mile over which the goods are carried. However, the maximum charge determined by the Commission is 0.3333c per cwt. Thus, for a vehicle of an unladen weight of three tons engaged on an out-of-area journey of 120 miles, the permit fee would be \$24 (i.e. $0.3333c \times 60 \times 120$). If goods are carried on the return journey, a further permit fee is payable. In the example quoted, the permit fee at 20 cents per mile virtually doubles the cost of operating the vehicle; it is sufficiently high to prevent most licence holders from travelling outside their area in competition with the railways or with licensed carrier services.

Rebates

In actual fact, it is not always necessary for operators to pay full permit fees as described in the previous paragraph since percentage rebates on full fees may be claimed. Such rebates have relation to the suitability of the goods for transport by rail or licensed carrier and are greatest for certain perishable goods; in general, the shorter the journey, the greater the rebate percentage.

Nominal Fees

Commission policy is to avoid unnecessary duplication of transport, and full fees are charged if the goods in question can be handled as conveniently and efficiently by rail or by an existing licensed carrier service. The Commission grants permits at nominal fees of \$1.00 per trip up to 50 miles and \$2.00 per trip over 50 miles if it is satisfied that road transport is more suitable for any of the following reasons: (i) the dimensions of the load are outside railway clearance; (ii) the perishable nature of the goods makes them unsuitable

for rail transport; (iii) time element; (iv) shortage of rail waggons; (v) unreasonably high cost of rail transport compared with road transport, because of extra handling or other reasons; (vi) special circumstances.

It is estimated that less than a third of out-of-area trips are at full fees, the balance being for nominal fees or at rebates of from 30 to 80 per cent of the full fee.

Ancillary Vehicles

In particular circumstances and where small vehicles frequently travel beyond their licensed areas, an annual fee determined in accordance with the degree of competition with rail and licensed carrier services is charged. In all other cases, vehicles licensed as 'ancillary' are required to obtain out-of-area permits for each loaded journey undertaken beyond the limits of the licensed area.

Passenger Vehicles

Commercial passenger vehicles operating out-of-area may be competing with existing rail or licensed coach services, in which case they can be charged fees at a maximum of 0.5c per passenger seat per mile. If no such competition exists, out-of-area fees are charged at \$0.50 for each 25 miles; in the case of round trips, the mileage is halved in applying the charge formula.

Percentage Fees—Coaches and Carriers

Coaches and carriers receiving licences to operate over routes which extend beyond one traffic area are required to pay a fixed annual fee, or a percentage tax on annual revenue, the extent of the tax being proportional to the assessed competition with rail services.

Transport Commission Road Transport Services

In 1967-68, the Commission's passenger bus services operated over 564 route miles, not only linking the principal towns but also providing inter-urban and special services for workers. During the year the Commission's coaches ran nearly one million vehicle-miles.

In June 1968, Parliament took note of losses incurred by the Commission's road services and amended the *Transport Act* requiring the Commission to cease operating its road services. The Commission's road services were closed down in December 1968.

Transport Commission Shipping Services

The Transport Commission exercises control over: (i) the Bruny Island ferry; and (ii) shipping services between Flinders Island, Hobart, Launceston and Victorian ports.

During 1967-68 a Government appointed committee recommended the replacement of the *Sumatra* with a larger, more economic vessel. The newly constructed *Birtbe Andreasen* renamed *Joseph Banks* was purchased and extensively converted to suit the requirements of the intrastate trade. The vessel commenced operating in January 1969 on the inter-island run and between Tasmanian and Victorian ports.

The new ship is better able to handle livestock and has a carrying capacity of either approximately 5,000 sheep or 800 head of cattle.

RAILWAYS

Historical

Tasmania has a three foot six inch gauge government railway system based on a route mileage of a little under 500 miles. A private railway of 83 miles is operated by the Emu Bay Railway Company Ltd between Burnie and Melba Siding (twelve miles south of Rosebery).

The first railway in Tasmania was opened for traffic in 1871 (construction having begun three years earlier on a 45-mile line from Deloraine to Launceston). It is significant that only one-ninth of the original capital was subscribed by the shareholders of the Launceston and Western Railway Company, the remainder, \$800,000, being raised by the Government. The line was laid in broad gauge (five foot three inch) without regard for the fact that narrower gauge might be needed in the more mountainous parts of the island. Within a year of opening, the company was in financial difficulties and the line was taken over by the Government. At the date of starting construction, the island's population had not passed 100,000.

The second line was an even more ambitious undertaking—123 miles of three foot six inch track from Hobart to Western Junction, linking there with the five foot three inch line—and involved considerable problems of contour survey because of the high plateau lying across the route. The Tasmanian Main Line Railway Company opened the line for traffic in 1876. The problem of differing gauges on the two systems was overcome by laying a third rail on the ten miles of the five foot three inch track from Western Junction to Launceston, the Main Line Company having running rights over this stretch. In 1890, the Government purchased the line for \$2,213,000.

The next line to open for traffic (1884) was owned by the Emu Bay and Mount Bischoff Railway Company which converted an existing horse-tramway to three foot six inch gauge; the 48-mile line connected Waratah to the port of Burnie, the primary objective being to ship out freight from the rich Mount Bischoff tin mines.

By 1890, the essential framework of the present railway system on three foot six inch gauge had been laid, and future growth involved track extensions mainly in directions already determined in the first twenty years of rapid construction. The following table shows the pattern of development in 1890 and compares it with that of the present system. Under 'route' is shown firstly the terminals of individual tracks in 1890 and secondly the present extent of the same tracks. Only construction dates before 1890 have been quoted since later extension of track was carried out in several stages.

Government and Private Railways
Route Mileage of Lines Open—1890 and 1970

Route	Area Served	Year Open For Traffic	Mileage of Lines Open	
			1 Jan. 1890	30 June 1970
Launceston to Devonport ..	North West	1885	(a) 82	..
Launceston to Smithton ..	" "	..	..	(a) 179
Hobart to Western Junction ..	North-South link	1876	(b) 123	(a) 123
Burnie to Waratah ..	West Coast	1884	(b) 48	..
Burnie to Melba Siding ..	" "	..	..	(b) 83
Conara to St Marys ..	Fingal Valley	1886	(a) 46	(a) 46

Government and Private Railways—continued
Route Mileage of Lines Open—1890 and 1970

Route	Area Served	Year Open For Traffic	Mileage of Lines Open	
			1 Jan. 1890	30 June 1970
Bridgewater to Glenora ..	Derwent Valley	1888	(a) 24	..
Bridgewater to Maydena ..	" "	..	..	(a) 44
Launceston to Scottsdale ..	North East	1889	(a) 47	..
Launceston to Herrick ..	" "	..	..	(a) 85
Other Branches .. ..	..	..	(a) 4	(a) 23
Total Route Miles Open ..	..	..	374	571
Government .. ..	..	..	203	500
Private .. ..	..	..	171	83

(a) Government.

(b) Private

The table does not show two defunct lines which used to operate on the west coast; these were: the government service, Zeehan to Strahan (29 miles), opened in 1892; and the private service, Queenstown to Strahan (21 miles), opened in 1899. The Emu Bay railway was extended to Zeehan by 1900 when it became possible to make a Burnie-Queenstown trip by using all three services and moving Burnie-Zeehan-Strahan-Queenstown.

In 1965, the Emu Bay Railway Company Ltd closed the line from Rosebery to Zeehan; twelve miles of this line, from Rosebery to Melba Siding, was re-opened in January 1970 to enable the transportation of iron pyrites to the North-West Acid Pty Ltd plant at Burnie.

Growth and Decline

The main task of developing and maintaining railways fell to the Tasmanian Government after it purchased the Hobart-Western Junction line in October 1890. The next table shows the mileage of Government-owned railways from 1895 to the present.

The peak of development was reached in 1930 when 679 miles were open for traffic; since then, many branch lines have been closed down, the competition of road transport making their operation uneconomic. Route mileage has actually declined to what it was over fifty years ago at the outbreak of World War I. Examples of lines now closed down are: Brighton to Apsley, 27 miles; Bellerive to Sorell, 15 miles; Zeehan to Strahan, 29 miles.

Government Railways—Route Mileage of Lines Open at 30 June

Year	Route Miles Open	Year	Route Miles Open	Year	Route Miles Open
1895 (a) ..	420	1925 ..	673	1950 ..	613
1905 ..	463	1930 ..	679	1955 ..	605
1910 ..	470	1935 ..	645	1960 ..	538
1915 ..	533	1940 ..	644	1965 ..	500
1920 ..	629	1945 ..	642	1970 ..	500

(a) At 31 December 1895.

Recent Developments

The long-term problem of the State railway system has been to reduce its annual operational loss. In August 1968, the Transport Commission appointed a Committee of Review to undertake a comprehensive study of the railway system with the purpose of improving the financial situation. Since the presentation of the Committee's report in January 1969, the Commission has begun to carry out progressively the Committee's recommendations. Various organisational changes have been instituted, including the establishment of a research and development section, the reconstitution of a commercial section and the amalgamation of some administrative functions.

Introduction of Diesel Locomotives

The elimination of steam locomotives from the system has been almost completed; 14 such locomotives have been placed in storage and the six remaining in service are only used for shunting and stand-by purposes. In 1968-69, steam locomotive engine miles were only 0.36 per cent of total engine miles. Three types of diesel are in operation: mechanical, hydraulic and electric but the bulk of running falls on the diesel electric locomotives. At 30 June 1969, the system had the following locomotives in service: steam 6, diesel mechanical 18, diesel hydraulic 2, diesel electric 37, total 63. In addition, services were maintained using 13 self-contained railcars.

Reduction in Passenger Services

The peak of the system's effectiveness in carrying passengers was reached in 1945-46 when 3.4 million passenger journeys were made. Of recent years, a deliberate policy of eliminating uneconomic services has been pursued and passenger journeys in 1968-69 had fallen to 1.05 million.

Rail-Ferry Service

This service is somewhat ambiguously titled since, in other parts of the world, there are railway ferries actually moving rolling stock across water barriers. In the Tasmanian situation, there are roll-on roll-off ferries and container vessels, but there is no means of transferring rolling stock to the mainland railways; in any case, the different gauges (three foot six inch as against four foot eight and a half inches) present a major difficulty. The introduction of roll-on roll-off ferries and container vessels to the Bass Strait trade in 1959 was nevertheless accepted by the State railways as an opportunity to extend their existing freight services; the new facility was named 'rail-ferry service'.

In essence, the rail-ferry service aims at giving door-to-door transport between Tasmania and the mainland States. At the Tasmanian end, transport to and from the sea terminals is handled by the railways and by local carriers commissioned by the railways. The ports through which the service operates are Burnie, Devonport, Bell Bay and Hobart. At the Victorian sea terminals, carriage is arranged through a road transport agency which acts in co-operation with the Tasmanian railways.

The service began with the evolution of the 'railroader' container, a cargo-carrying unit which is adaptable to the carriage of almost any type of freight. The sides and ends of the 'railroader' are removable for the carriage of long articles (e.g. packed timber), or for the nesting of the pallet-like trays, to enable their movement in parcels of up to six within the space of a single unit. Because these containers are of open design, the charges for cargo are based on external container measurement and actual height of cargo: the consignor is therefore not responsible for the cost of lost space, as would be

the case with an enclosed type of container. In addition to the general purpose 'railroader' specialised types of container have been evolved, e.g. for heated liquid chocolate, and specially built fibreglass refrigerated containers for frozen vegetables, etc. Rail-ferry service traffic from Tasmania consists chiefly of potatoes, timber, tin, chilled meat, dairy products, canned and frozen vegetables, confectionery and liquid chocolate, while from Melbourne the traffic consists mainly of general cargo, including food stuffs, plastics, footwear, steel, etc. Although the tonnage carried in containers during 1968-69 (111,000 tons) showed a decrease of 4.9 per cent, actual railway revenue from rail-ferry operations increased by 17.8 per cent.

Bell Bay Line

The State Government has been investigating the economic feasibility of constructing a new line from the City of Launceston to the growing industrial centre and port at Bell Bay, a distance of 37 miles. A detailed report on the feasibility study was submitted to the Commonwealth Government and a decision became available in late 1970.

Freight Developments

Modernisation of the railways has affected the carriage of freight generally; in the last 25 years, the following changes have been achieved: (i) density of traffic per mile of line worked (measured as net ton-miles) increased nearly fourfold; (ii) train loads increased by 300 per cent; (iii) average length of haul doubled; and (iv) development of containerisation and bulk transport facilities.

For many years, the size of any commodity carried by rail was limited by a structural clearance of 12 ft 6 in high x 10 ft 6 in wide. These clearances have recently been increased to cater for goods up to 15 ft high x 13 ft 6 in wide; further increases to 16 ft high x 14 ft wide are planned for the near future.

Due to an increased demand for transport facilities for new motor vehicles, the railway workshops have designed and constructed a two-deck car-carrying wagon, over 70 ft long and capable of carrying eight motor cars; the upper deck is provided with an hydraulically operated ramp.

Ten Scandia-type containers for use in the rail-ferry service have also recently been built, each has a capacity of 20 tons and is equipped with removable sides to facilitate loading. Other rolling stock improvements include the design and manufacture of a multi-purpose open wagon to carry bulk commodities, containers and general freight. The wagon is almost 50 ft long with a maximum capacity of 44 tons.

The Transport Commission has successfully developed a rail-road service designed to deliver heavy machinery and other construction equipment to the Hydro-Electric Commission's Gordon River power development scheme. The task involves rail haulage to Maydena, road haulage from Maydena to the Gordon River project site by members of the Tasmanian Road Transport Association, under contract to the Transport Commission. To meet the special requirements of the Gordon Project new types of containers have been designed for the carriage of gas cylinders and bulk cement.

Construction Work

Two major civil engineering construction works have recently been completed; the Cam River railway bridge at Somerset has been replaced using seven 60-foot long spans of pre-stressed concrete and a new station yard and building complex was completed at Burnie.

Operating Statistics

The next table shows the principal operating statistics for the Tasmanian system:

**Tasmanian Government Railways
Operating Statistics**

Year	Route-Mileage Open (a) (Miles)	Revenue Train-Mileage (^{'000} Miles)	Passenger- Journeys (^{'000})	Goods and Livestock Carried (^{'000} Tons)
1963-64 ..	500	1,322	1,426	1,155
1964-65 ..	500	1,272	1,340	1,091
1965-66 ..	500	1,283	1,304	1,072
1966-67 ..	500	1,274	1,197	1,079
1967-68 ..	500	1,247	1,087	1,162
1968-69 ..	500	1,197	1,045	1,242

(a) At end of period.

Financial Operations

The following table gives details of gross earnings and working expenses:

**Tasmanian Government Railways
Financial Operations**

Year	Gross Earnings		Working Expenses (a)		Net Earnings (b)	
	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile
	\$ ^{'000}	\$	\$ ^{'000}	\$	\$ ^{'000}	\$
1963-64	5,668	4.29	6,940	5.24	-1,272	-0.95
1964-65	5,581	4.39	7,233	5.68	-1,652	-1.30
1965-66	5,985	4.66	7,563	5.89	-1,578	-1.23
1966-67	6,588	5.17	8,325	6.53	-1,737	-1.36
1967-68	6,587	5.28	8,751	7.02	-2,164	-1.74
1968-69	6,947	5.80	9,089	7.59	-2,142	-1.79

(a) Includes provision for depreciation but excludes interest.

(b) Excess of gross earnings over working expenses.

Employment and Wages

In the table that follows, details are given of the number of employees, and of wages and salaries paid:

**Tasmanian Government Railways
Number of Employees and Wages and Salaries Paid**

Year	Average Number of Employees (a)		Salaries and Wages Paid (\$ ^{'000})	Year	Average Number of Employees (a)		Salaries and Wages Paid (\$ ^{'000})
	Salaried	On Wages			Salaried	On Wages	
1963-64	366	1,895	5,220	1966-67	386	1,854	6,107
1964-65	377	1,837	5,355	1967-68	417	2,007	6,425
1965-66	379	1,781	5,651	1968-69	399	1,949	6,700

(a) Excludes construction staff.

Comparison with Other Australian Systems

The Tasmanian system of government railways is the smallest in Australia and the following table, showing principal operational details, allows a comparison to be made:

Australia—Government Railway Systems, 1968-69
Operating Statistics

System	Route Mileage Open (Miles)	Revenue Train Mileage (⁰ 000 miles)	Passenger Journeys (a) (b) (⁰ 000)	Revenue Goods and Livestock Carried (a) (⁰ 000 tons)	Revenue Net Ton- Miles (Millions)
N.S.W.	6,061	38,201	248,469	31,871	4,942.4
Victoria	4,176	19,689	144,866	11,316	1,903.0
Queensland	5,824	17,109	28,165	12,975	2,617.5
S.A.	2,460	6,176	14,423	5,003	803.7
W.A.	3,826	7,901	10,170	8,934	1,525.8
Tasmania	500	1,197	1,045	1,242	117.2
Commonwealth	2,248	3,559	(c) 298	(d) 4,401	1,216.3
Total Australia ..	25,095	93,832	447,437	75,742	13,125.9

(a) Interstate traffic is included in the total for each system over which it passes.

(b) Based on ticket sales making allowances for periodical tickets. Tickets sold at concession rates are counted as full journeys.

(c) Passenger journeys continuing over both the Trans-Australian and Central Australian Railway systems are counted twice. In 1968-69 these numbered 10,531.

(d) Tonnages carried over both the Trans-Australian and Central Australian Railway systems are counted twice. In 1968-69, 187,944 tons were counted twice.

The financial operations of the six State railways and the Commonwealth Government line are shown below.

Australia—Government Railways, 1968-69
Financial Operations
(\$ million)

System	Gross Earnings (a)	Working Expenses (b)	Net Earnings (c)	Plus Other Earnings Payable to Railways (d)	Less Other Expenses Charged to Railways (e)	Surplus or Deficit
N.S.W.	228.6	205.2	23.4	3.2	34.5	-8.0
Victoria	100.5	111.2	-10.7	..	6.7	-17.3
Queensland	102.5	91.4	11.0	..	24.1	(f) -13.1
S.A.	30.3	(g) 36.2	-5.9	11.2	6.6	-1.3
W.A.	49.4	(g) 49.9	-0.6	1.2	10.7	-10.1
Tasmania	6.9	(g) 9.1	-2.1	..	1.1	-3.2
Commonwealth	25.4	(g) 24.6	0.8	..	..	0.8
Total Australia ..	543.5	527.6	15.9	15.8	83.9	-52.2

(a) Excludes Government Grants and Road Motor Services.

(b) Excludes Road Motor Services.

(c) Gross earnings less working expenses. See note (a) and (b).

(d) Includes State Government Grants and Road Motor Earnings.

(e) Includes interest and exchange, sinking fund, Road Motor expenses and other expenses charged to Railways.

(f) Includes deficit (\$538,823) on the Queensland 4 ft 8½ in gauge.

(g) Includes provision of reserves for depreciation.

Financial Comparison

In comparing the financial results of the Tasmanian system with those of other authorities, certain difficulties arise from the treatment of depreciation. In the preceding table, working expenses for the Tasmanian, S.A., W.A. and Commonwealth systems include provision of reserves for depreciation. A further complication arises from the fact that interest is not charged against the railways accounts of the Commonwealth system, and, in the Victorian system, only in respect of loan expenditure incurred since 1 July 1960.

To the extent that there is differing treatment of interest and of depreciation provisions in the various systems, the 'surplus or deficit' shown in the table is not a good basis for making comparisons; however, if due allowance is made for interest charges in the case of the Commonwealth system, it will be seen that loss, rather than profit, is characteristic of all Australian systems.

GOVERNMENT OMNIBUS SERVICES**Introduction**

In the 1970 *Year Book* this section was headed 'Government Tramway, Trolley Bus and Omnibus Services' and tables were compiled to show, as one series, the operations of the Transport Commission's omnibus fleet and of the trams, trolley-buses and omnibuses operated by the Metropolitan Transport Trust. The short title now used is due to these developments:

- (i) Launceston gave an early lead in replacing its trams with omnibus and trolley-bus services. Hobart eventually did the same; the last trams ceased running there in October 1960.
- (ii) The Metropolitan Transport Trust replaced the last trolley-buses with omnibuses in 1968 (in Launceston, from 19 July; and Hobart, from 24 November).
- (iii) Parliament under the *Transport Commission (Road Transport Undertaking Disposal) Act* 1968, insisted that the Commission sell its road services fleet to an operator in the private sector; the fleet came under private ownership at midnight, 7 December 1968. (The continuance of these government road services had needed Parliamentary approval but this approval was not given due to trading losses experienced in 1965-66 and 1966-67.) In 1967-68, the last full year of operation by the Transport Commission, the fleet operated over 564 route miles and ran nearly one million vehicle-miles.

As a result of these developments, the only Government road services in operation from 8 December 1968 were those operated by the Metropolitan Transport Trust at Hobart, Launceston and Burnie.

Metropolitan Transport Trust

Until 1955, tramway, trolley-bus and omnibus services were operated in Hobart and Launceston by the municipal authority in each city. The Hobart system had operated without subsidy but the Launceston system received, as one item of revenue, the annual proceeds from a special tramways rate.

The *Metropolitan Transport Act* 1954 empowered the State to enter into agreements for the acquisition of the two systems and to vest them in the newly constituted semi-government authority named in the Act. After negotiation with the two municipal authorities, the Trust arranged to take over the Hobart

system from 28 February 1955, and the Launceston system from 1 July 1955. It was part of the agreement that the Trust should reimburse to the municipal authorities the annual charges relating to the loan debt of each system. Future capital was to come from the State loan fund. During 1959-60, the Trust commenced the operation of omnibus services in Burnie.

Financial Operations of Trust

The following table shows the income and expenditure of the Metropolitan Transport Trust:

**Metropolitan Transport Trust
Income and Expenditure
(\$'000)**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69
Income—					
Traffic Operations	1,798	1,962	2,093	2,125	2,235
Other Earnings	31	32	31	33	35
Subsidy, State Government	760	760	975	875	1,030
Total	2,589	2,754	3,099	3,033	3,300
Expenditure—					
Traffic Operations	1,269	1,357	1,505	1,561	1,688
Maintenance	450	468	499	518	492
Power and Fuel	186	197	210	235	226
Workshop and Stores	34	34	62	51	49
Administration and General	295	308	339	369	405
Debt Charges	167	169	170	157	156
Depreciation Charges	205	215	223	232	234
Total	2,606	2,749	3,008	3,122	3,250

Loan Debt of Trust

The loan debt of the Trust is partly in respect of debentures and inscribed stock originally issued by Launceston Corporation. Debentures originally issued by the Hobart Corporation have been fully repaid, the last instalment being made in 1965-66. At 30 June 1969, loans of this nature stood at \$74,000; net advances from the State Loan Fund stood at \$2,688,000.

Operating Statistics

The next table shows the principal operating statistics for the Metropolitan Transport Trust:

**Metropolitan Transport Trust
Operating Statistics**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69 (a)
Route-miles (b)					
Trolley-bus	28	28	28	28	..
Omnibus	169	181	184	191	221
Vehicle miles—					
Trolley-bus '000	1,225	1,120	1,052	773	151
Omnibus '000	4,107	4,137	4,284	4,604	5,242
Passenger journeys (c) .. '000	23,580	22,397	22,248	21,819	21,246

(a) Trolley-buses ceased operating in Launceston on 19 July 1968 and in Hobart on 24 November 1968.

(b) At end of period.

(c) Trolley-bus and omnibus.

ROADS AND BRIDGES IN TASMANIA

Scope

The details in the following section refer to: (i) 'classified' roads; (ii) roads of local government authorities; (iii) roads of other government authorities. A further qualification is that the roads are those normally open to traffic.

Definitions and Mileages

(i) *Classified Roads*: These are roads for which the State Government accepts direct responsibility, the construction and maintenance authority being the Public Works Department. The mileage of classified (or State) roads at 30 June 1969 was as follows: State highways, 1,236 miles; main roads, 663 miles; secondary roads, 197 miles; tourist roads, 47 miles; and other roads, 157 miles; total State roads, 2,300 miles.

(ii) *Roads of Local Government Authorities*: The roads for which the local government authorities accepted responsibility at 30 June 1969, included: sealed roads, 1,847 miles; unsealed roads, 7,244 miles; total, 9,091 miles.

(iii) *Roads of Other Government Authorities*: The roads for which other government authorities accepted responsibility at 30 June 1969, included: roads of the Hydro-Electric Commission, 293 miles, Forestry Commission, 1,959 miles; total, 2,252 miles. The Hydro-Electric Commission mileage (293) includes the new road built from Maydena to the Gordon-Serpentine junction; this 53-mile route into the south-west was opened for public use in June 1967 but permits have to be obtained from the controlling authority.

Surface of Roads

The following table shows mileages of all roads normally open to traffic, classified according to road surface, and according to the level of government which accepts responsibility for construction and maintenance. The most striking feature is the increase, over the last five years, in the percentage of State (or classified) roads with sealed surfaces; as the table indicates, the sealed mileage has increased from 60.5 per cent to 74.7 per cent. The majority of the unsealed State (or classified) road mileage is located in the centre of the State, where the high altitude *Lake* and *Lyell* highways present serious construction problems.

Length of Roads According to Nature of Surface at 30 June

Type of Surface	1964	1965	1966	1967	1968	1969
CLASSIFIED STATE ROADS						
Sealed (a) ... miles	1,336	1,435	1,492	1,576	1,638	1,715
Unsealed (b) ... miles	874	809	754	705	658	585
Total ... miles	2,210	2,244	2,246	2,281	2,296	2,300
Sealed Ratio (c) %	60.5	63.9	66.4	69.1	71.3	74.7
ROADS OF LOCAL GOVERNMENT AUTHORITIES						
Sealed (a) ... miles	1,072	1,184	1,354	1,514	1,677	1,847
Unsealed (b) ... miles	7,510	7,438	7,373	7,408	7,350	7,244
Total ... miles	8,582	8,622	8,727	8,922	9,027	9,091
Sealed Ratio (c) %	12.5	13.7	15.5	17.0	18.6	20.3

Length of Roads According to Nature of Surface at 30 June—*continued*

Type of Surface	1964	1965	1966	1967	1968	1969
ROADS OF OTHER GOVERNMENT AUTHORITIES						
Sealed (a) .. miles	27	47	47	44	52	52
Unsealed (b) .. miles	1,442	1,625	1,807	1,882	2,037	2,200
Total .. miles	1,469	1,672	1,854	1,926	2,089	2,252
Sealed Ratio (c) %	1.8	2.8	2.6	2.3	2.5	2.3
ALL ROADS						
Sealed (a) .. miles	2,435	2,666	2,893	3,134	3,367	3,624
Unsealed (b) .. miles	9,826	9,872	9,934	9,995	10,045	10,029
Total .. miles	12,261	12,538	12,827	13,129	13,412	13,652
Sealed Ratio (c) %	19.9	21.3	22.6	23.9	25.1	26.5

(a) Bitumen or concrete.

(b) Includes roads formed or cleared only.

(c) Sealed roads as a proportion of total roads.

Classified (or State) Roads

The next table analyses the mileage of classified roads according to their description, and also according to their surface. The principal State highways include the following: (i) *Arthur* (46 miles), from Sorell to Port Arthur; (ii) *Bass* (177 miles), from Launceston to Marrawah in the far north-west; (iii) *Channel* (59 miles), from Hobart to Huonville, via D'Entrecasteaux area; (iv) *Huon* (59 miles), from Hobart to Hythe via Dover; (v) *Lake* (93 miles), from Deloraine via Great Lake to Melton Mowbray; (vi) *Lyell* (171 miles), from Granton, near Hobart, to Strahan; (vii) *Midland* (114 miles), from Glenorchy to Launceston; (viii) *Murchison* (48 miles), from Zeehan highway to Waratah area; (ix) *Tasman* (263 miles), from Hobart to Launceston, via East Coast and St Helens; (x) *Waratah* (45 miles), from Somerset to Waratah area.

Classified (or State) Roads
Description and Length at 30 June 1969
(Miles)

Description	Nature of Surface		Total
	Sealed (a)	Unsealed (b)	
Highways	1,066	170	1,236
Main Roads	496	166	663
Secondary Roads	88	109	197
Tourist Roads	4	43	47
Subsidised Roads	14	79	93
Developmental Roads	48	16	64
Total	1,715	585	2,300

(a) Bitumen or concrete

(b) Gravel or stone.

Expenditure on Roads

As indicated in the preface to this section, the responsibility for road construction and maintenance is placed upon the State Government, and upon local government and semi-government authorities. The financial details which follow relate only to funds available to the State Government. The next table gives a detailed analysis of funds available to the State Government and expenditure from State road funds:

State Road Funds Receipts and Expenditure (Combined Funds)
(\$'000)

Particulars	1966-67	1967-68	1968-69
Receipts—			
State—			
Motor Vehicle Registration, Taxation, Licences, Renewal Fees, Fines, etc.	3,961	4,396	4,587
Loan Fund	1,693	1,188	739
Commonwealth—			
Commonwealth Aid Roads Act Grants	7,500	8,000	8,500
Local Government—			
Repayment of Advances	38	32	70
Miscellaneous—			
Sale of Plant and Materials	79	88	54
Other	184	477	250
Total	13,455	14,180	14,200
Expenditure—			
Roads and Bridges—Construction and Reconstruction Maintenance	9,445	10,214	9,434
Purchase of Road Construction Plant and Similar Assets	3,167	3,436	3,540
Hire and Maintenance of Road Plant (Net) (a)	616	695	699
Purchase of Materials	—556	—588	—435
Other Works (Commonwealth Aid Roads Act)	30	18	22
Grants in Aid to Local Government Authorities	45	48	73
Other Expenditure	37	46	54
Total	13,513	14,197	13,704

(a) Hire of plant and workshop charges less maintenance and operation of road construction plant.

Grants under the Commonwealth Aid Roads Act provide the bulk of the funds with a major contribution also coming from the motoring public. The major item of expenditure is for the construction and reconstruction of roads and bridges.

In addition to the amounts shown above as Motor Vehicle Registration, Taxation, Licences, Renewal Fees, Fines, etc. Stamp Duty is charged on Third Party Insurance and on Motor Vehicle Registrations. These receipts are not paid into State Road Funds, but into Consolidated Revenue:

Stamp Duty on the Ownership and Operation of Motor Vehicles, paid into Consolidated Revenue
(\$'000)

Particulars	1966-67	1967-68	1968-69
Stamp Duty on—Third Party Insurance	265	275	291
Motor Vehicle Registration . . . . .	..	189	342



Eastern Outlet, Hobart, showing the progress of construction to February 1970

(Vern Reid)

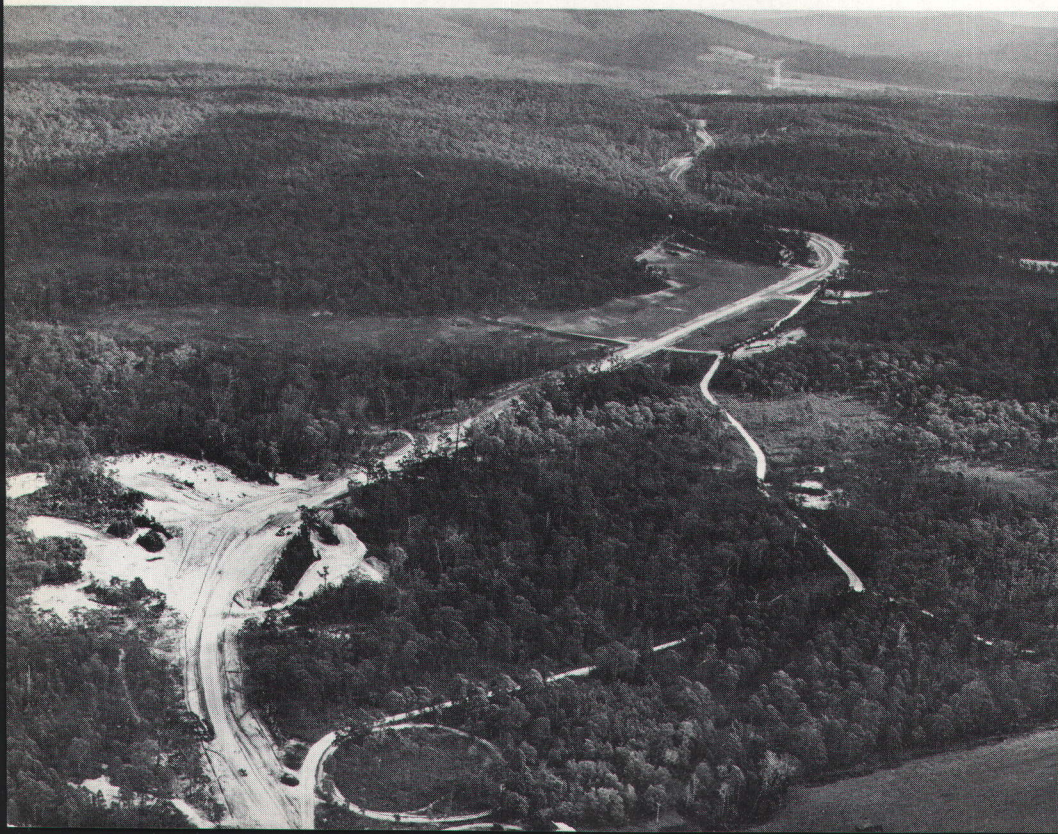


Eastern Expressway, Hobart

(Department of Film Production)

Bell Bay to Bridport developmental road

(Vern Reid)



Receipts and Expenditure, Local Government Authorities

Some of the expenditure appearing in the State Road Funds (Combined Funds) table consists of grants from the State Government to local government authorities, although such grants are not specifically dissected. In Chapter 4, 'Local Government', details will be found of: (i) grants from the State to local government authorities for road purposes; (ii) road rates collected by local government authorities; and (iii) expenditure on road construction and maintenance by local government authorities from revenue, and from loan funds.

Bridges in Tasmania

The Tasman Bridge is fully described in the 1967 *Year Book* and the Batman Bridge in the 1968 *Year Book*; the following summarises their principal characteristics.

The Tasman Bridge

The bridge, constructed at a cost of \$14.4m, is located on the Derwent estuary, a mile upstream from the main port and connects Hobart to its eastern shore suburbs across nearly 1,200 yards of deep water.

Built on pile-based piers, the Tasman Bridge reaches its maximum height in a fixed navigation span giving a minimum clearance of 150 feet to ships passing beneath. The dimensions are:

The Tasman Bridge: Dimensions

Bridge Sections	Number of Spans	Description	Length (feet)
Western spans	(a) 13	From <i>west</i> abutment to pier 13	1,820
Anchor span	1	From pier 13 to pier 14	197
Navigation span	1	" " 14 " " 15	310
Anchor span	1	" " 15 " " 16	197
Eastern spans	(a) 6	From pier 16 to <i>east</i> abutment	840
Total length between abutments			3,364

(a) Each span is 140 feet.

The bridge has four 11-foot traffic lanes with each bridge-end terminating in three-level interchanges to provide complete separation of the different streams of traffic. The eastern approach to the shore abutment is by a short viaduct of twelve 70 foot spans; the western approach is by grade separation viaducts approximately 400 feet long. When the abutment approaches are taken into account, the whole structure is over 4,600 feet long.

The Batman Bridge

The bridge is located 25 miles downstream from Launceston and crosses the Tamar at Whirlpool Reach; the main ports, Bell Bay, Beauty Point and Inspection Head, are five or six miles further downstream from the bridge which therefore need only give vertical clearance to interstate ships moving south to Launceston (94 feet is provided).

The \$5.2m bridge is a special type of two-lane suspension bridge with the supporting cables running back through the apex of a single giant A-tower on the west bank. This peculiarity in design is the direct result of the marked difference between the Jurassic bedrock of the west bank and the soft tertiary

clays of the east bank; with this geological handicap, it was necessary for virtually the whole weight of the river span (675 feet) to be carried by the west bank foundations. The 315 foot A-tower is inclined at 20° to the vertical so that it leans out over the river; as a result, any lateral thrust exerted by the river span is directed back against the west bank.

The dimensions of the Batman Bridge are:

The Batman Bridge: Dimensions

Bridge Section	Description	Length (feet)
Side span	From <i>west</i> abutment to bar of A-tower	180
River span	From bar of A-tower to first east pier	675
First aqueduct span..	From first east pier to second	157½
Three aqueduct spans	From second pier over third and fourth to <i>east</i> abutment	(a) 405
Total length between abutments		1,417½

(a) Each span is 135 feet.

MOTOR VEHICLE REGISTRATIONS

General

Statistics in this section deal with: (i) motor vehicles 'on register' at specific dates; and (ii) new motor vehicles registered within a specified period, e.g. a year.

Definitions

Register: To be allowed on the public roads, motor vehicles, except those owned by the Commonwealth Government, are required to be registered with the State Transport Commission; State Government vehicles, as well as privately-owned vehicles, are registered with this authority. Commonwealth Government-owned vehicles, except those belonging to the defence services, are recorded on a separate Commonwealth register. 'On the register', in this section, refers to both the State and Commonwealth registration records, and to all motor vehicles except those of the defence services. Statistics of new motor vehicle registrations comply with the same definition.

Vehicles Included: The statistics cover cars, station wagons, motor cycles and commercial vehicles. Commercial vehicles as defined include utilities, panel vans, trucks and omnibuses. Tractors, trailers, and mobile plant and equipment are excluded.

Because of the multi-purpose nature of rear-door sedans it is possible for these types of vehicles to be registered as either cars or station wagons. In these statistics all rear-door sedans are classified as cars.

Vehicles on Register

The following table has been compiled to show, in summary form, the increase in motor vehicles on the register since 1910. To give a convenient measure of this growth, vehicles on the register have been related to the population (vehicles per 1,000 persons), and increases have also been expressed as annual averages for each decade.

Motor Vehicles on Register from 1910

At 30 June	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Average Annual Increase (b)
1910	210	(a)	223	433	2	..
1920	2,404	(a)	1,699	4,103	20	367
1930	12,533	2,198	4,814	19,545	89	1,544
1940	17,598	5,235	3,351	26,184	109	664
1950	25,291	12,928	4,941	43,160	156	1,698
1960	63,748	26,352	3,098	93,198	271	5,004
1968	108,185	32,492	2,189	142,866	374	..
1969	114,283	33,865	2,751	150,899	389	(c) 6,411

(a) Included with cars and station wagons.

(b) For decade ending in year shown.

(c) For nine years ended 30 June 1969.

The next table gives details of motor vehicles on the register for recent years; annual increases are shown to allow comparison with the average annual rates for each decade appearing in the previous historical table.

Motor Vehicles on Register

At 31 December	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Annual Increase
1960	66,140	26,667	2,763	95,570	268	..
1961	70,350	27,177	2,537	100,064	275	4,494
1962	75,697	27,275	2,101	105,073	293	5,009
1963	81,642	28,125	1,856	111,623	308	6,550
1964	88,084	29,005	1,586	118,675	324	7,052
1965	94,039	29,823	1,441	125,303	339	6,628
1966	99,947	31,184	1,562	132,693	355	7,390
1967	104,652	31,908	1,833	138,393	365	5,700
1968	111,163	33,218	2,501	146,882	380	8,489
1969	116,785	34,210	2,948	153,943	394	7,061

Motor Vehicles on Register in Australia

While different concepts of what constitutes 'motor vehicles on register' at a particular point of time may be appropriate for different purposes, for the purpose of obtaining uniform statistics for all States and Territories, it is necessary to adopt a common concept of what constitutes 'motor vehicles on register' at a particular date. For this series, the Bureau has adopted the concept of motor vehicles on register at a particular date as being:

- (i) vehicles whose fees were paid up at that date, in respect of that date; and

- (ii) vehicles whose fees were not paid up at that date but subsequently were paid retrospectively to that date (or to an earlier date);

and excluding all vehicles whose fees were not subsequently paid up in respect of that particular date, even though at that date their registrations may not have been formally terminated.

The following table shows details of motor vehicles on the register for each State and Territory at 30 June 1969. The figures are based on a census of motor vehicles which was taken at 31 December 1962 and are subject to revision. They were compiled from data supplied by the various registration authorities and include diplomatic and consular vehicles and all Commonwealth-owned vehicles other than those belonging to the defence services.

Australia—Motor Vehicles on Register, 30 June 1969

State or Territory	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles	
				Total	Per 1,000 of Population
	'000	'000	'000	'000	no.
N.S.W.	1,260	308	41	1,609	363
Victoria	1,009	228	19	1,255	374
Queensland	473	162	17	652	372
S.A.	350	87	13	450	397
W.A.	289	97	10	396	426
Tasmania	114	34	3	151	391
N.T.	14	8	1	23	341
A.C.T.	43	6	1	51	431
Total	3,551	930	105	4,586	377

Registration of New Motor Vehicles

In the next table, details are shown of new motor vehicles registered in Tasmania over a five-year period:

Annual Registrations of New Motor Vehicles

Type of Vehicle	1965	1966	1967	1968	1969
Cars	8,507	8,595	9,543	9,915	9,798
Station Wagons	1,936	1,709	1,619	r 1,396	1,335
Utilities	1,170	1,308	1,243	1,134	1,114
Panel Vans	424	500	499	479	522
Trucks	864	789	802	680	777
Motor Cycles	122	272	575	851	763
Other (a)	106	109	88	r 115	90
Total	13,129	13,282	14,369	14,570	14,399

(a) Includes omnibuses, ambulances and hearses.

New Registrations According to Make

The table that follows analyses Tasmanian registrations of new cars and new station wagons according to the make, and illustrates the present popularity of Holden, Ford, Chrysler, Toyota and Morris.

Registrations of New Cars and New Station Wagons, 1969
Classified to Predominant Make

Make	Cars		Station Wagons	
	Number	Proportion of Total Cars (Per Cent)	Number	Proportion of Total Station Wagons (Per Cent)
Alfa Romeo.. .. .	12	0.1	..	..
Austin	344	3.5	..	..
Chrysler	746	7.6	124	9.3
Datsun	424	4.3	39	2.9
Dodge	11	0.1	..	..
Fiat	139	1.4	5	0.4
Ford	2,180	22.2	340	25.5
Hillman	279	2.8	45	3.4
Holden	3,310	33.8	638	47.8
Honda	45	0.5	..	..
Isuzu	66	0.7	..	..
M.G.	26	0.3	..	..
Mazda	266	2.7	33	2.5
Mercedes Benz	41	0.4	..	..
Mitsubishi	75	0.8	..	..
Morris	607	6.2	1	0.1
Peugeot	69	0.7	6	0.4
Renault	99	1.0	..	..
Toyota	696	7.1	31	2.3
Triumph	57	0.6	..	..
Volkswagen	235	2.4	65	4.9
Other	71	0.7	8	0.6
Total	9,798	100.0	1,335	100.0

'Scrapping' of Motor Vehicles

Apart from the few 'veteran' cars owned by enthusiasts, most vehicles are eventually scrapped. No information is collected on the number scrapped each year but the following table contains information from which some inferences may be drawn:

New Motor Vehicles Registered and Annual Increase in Motor Vehicles on Register

Particulars	1965	1966	1967	1968	1969
New Motor Vehicles Registered (a)	13,129	13,282	14,369	14,570	14,399
Annual Increase, Motor Vehicles on Register (b)	6,628	7,390	5,700	8,489	7,061

(a) During year ended 31 December.

(b) Annual increase measured at 31 December.

In comparing the two sets of figures in the previous table, it would be wrong to assume that the difference in each year represented scrapped vehicles only; exceptions would include vehicles transferred interstate and vehicles 'on blocks'—the fact that an owner has let a registration expire does not necessarily mean that he intends to scrap his vehicle. Subject to these and similar difficulties of interpretation, it would appear that about seven thousand motor vehicles have been scrapped annually since 1964.

ROAD TRAFFIC ACCIDENTS IN TASMANIA

Scope of Statistics

With the rapid development of road transport, there has come an increase in the number of road traffic accidents; some merely involve damage to vehicles, but others result in injury or death. To evolve meaningful statistics describing these events, it has been found necessary to narrow the field of observation to those road traffic accidents which involve casualties, since some accidents resulting only in vehicle damage are not reported to the police (the drivers might merely exchange names and report to their respective insurance companies). Further, there is the difficulty of fixing, in monetary terms, some valid standard for determining what degree of vehicle damage warrants inclusion of an accident in a long-term statistical series—obviously \$20 or \$50 for repairs in 1950 is not comparable with \$20 or \$50 for repairs now.

For these and other reasons, the statistics in this section are restricted to details of those road traffic accidents which were recorded by the police involving casualties requiring medical or surgical treatment, or causing death.

Source of Data

Details of each road traffic accident reported to the police, or investigated by the police, are recorded on a standard form and copies are made available to the Transport Commission and to the Bureau of Census and Statistics; at the Bureau, monthly statistics are compiled only from those reports describing accidents involving casualties. The Transport Commission employs the reports it receives in connection with road engineering, the location of traffic signs and signals, the pin-pointing of dangerous locations, traffic engineering, and accident prevention in general.

Responsibility for, and Cause of, Accidents

For the purposes of the statistics in this section, the police officer reporting the accident determines, on the basis of the evidence available, the road user or agency responsible, and also the cause of the accident. The fact that civil or criminal courts may later make different decisions on these matters is disregarded in these statistics; nor is any attempt made to distinguish between accidents giving rise to subsequent legal action and those not doing so.

Causes of Accidents

Causes of accidents in Australian States are classified, for statistical purposes, in accordance with a standard list of 76 prime causes (although, in this section, only the most frequent causes will be shown). Contributory causes and conflicting or incomplete evidence make precise classification difficult. No provision is made to record and classify such antecedent causes as fatigue, the influence of intoxicating liquor, discourtesy, impatience or other driving faults (e.g. 'intoxication' is listed as a possible prime cause but where evidence of intoxication is inconclusive, the reporting police officer usually shows some more immediately apparent cause).

Road Traffic Accidents Statistics

The following table summarises the principal statistics of road traffic accidents involving casualties from 1949-50:

Road Traffic Accidents Involving Casualties, Selected Years from 1949-50

Period	Accidents		Persons			
	Number	Per 10,000 Vehicles Registered (a)	Killed		Injured	
			Number	Per 10,000 Vehicles Registered (a)	Number	Per 10,000 Vehicles Registered (a)
1949-50	969	242	64	16.0	1,154	288
1959-60	743	82	79	8.7	1,004	111
1964-65	1,180	99	97	8.2	1,692	142
1965-66	1,291	103	88	7.0	1,955	155
1966-67	1,356	102	102	7.7	2,081	157
1967-68	1,268	91	112	8.1	1,990	143
1968-69	1,400	95	122	8.3	2,228	151
1969-70	1,413	92	122	7.9	2,268	147

(a) Based on average number of motor vehicles on register during period. 'Vehicles on Register' is defined in the earlier section headed 'Motor Vehicle Registrations'.

It can be inferred from the above table that the annual totals of accidents involving casualties, and of persons killed and injured, have increased at a much slower rate than have motor vehicles on the register. In 1950, there were 43,160 motor vehicles on the register at 30 June, the corresponding figure for 1969 being 150,899; in the period covered by the table, the registration figure has more than tripled, whereas accidents and casualties have less than doubled, and the rates per 10,000 vehicles have fallen significantly.

Location of Accidents

The first table shows the location of accidents in the State:

Road Traffic Accidents and Casualties by Local Government Area, 1968-69

Local Government Area	Accidents Involving Casualties	Persons Killed	Persons Injured
Hobart	320	17	467
Launceston	183	6	278
Glenorchy	115	6	165
Clarence	79	7	120
Burnie	79	5	126
Devonport	68	6	116
Other	556	75	956
Total	1,400	122	2,228

Responsibility for Road Accidents

The next table shows the agency or type of road user believed responsible:

Responsibility for Road Traffic Accidents, 1968-69

Responsibility Attributed to—	Accidents Involving Casualties	Persons Killed	Persons Injured
Drivers of Motor Vehicles ..	1,077	80	1,851
Riders of Motor Cycles	55	3	56
Pedal Cyclists	25	..	27
Pedestrians	125	26	110
Passengers	3	..	3
Motor Vehicle Defects	44	3	55
Motor Cycle Defects	2	..	3
Pedal Cycle Defects	3	1	2
Animals	4	..	8
Road Conditions	39	3	75
Weather	11	1	18
Parties not Involved (a)	9	..	9
Other Causes	3	5	11
Total	1,400	122	2,228

(a) e.g. a car collides with another, after swerving to avoid a pedestrian who is not struck.

Cause of Accidents—Drivers of Motor Vehicles Responsible

The next table analyses accidents for which drivers of motor vehicles were believed responsible:

Road Traffic Accidents, Drivers of Motor Vehicles Responsible, 1968-69
Classification According to Cause

Principal Causes of Accidents for which Drivers of Motor Vehicles (excluding Motor Cycles) were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Excessive speed having regard to conditions	192	43	357
Not keeping to the left	129	8	289
Not giving right of way to other vehicles at intersection	246	8	431
Failing to make right-hand turn at intersection with due care	34	..	57
Intoxicated	66	8	121
Inexperienced, including inexperience with type of vehicle in use at time of accident	31	2	49
Inattentive driving	169	6	250
Reversing without care	11	..	12
Overtaking on near-side or in the face of oncoming vehicle(s) or without enough clearance	27	3	40
Following other vehicle too closely	35	..	49
Infirmity of driver	6	1	8
Driver asleep or drowsy	22	..	36
Dazzled by lights of an approaching vehicle	9	..	15
Failing to signal intention of turning or stopping, or giving incorrect signal	13	..	19
Pulling or swinging out from kerb suddenly or without warning	20	..	24
Disregarding, misunderstanding or failing to observe traffic sign or signal of other driver	42	1	64
Crossing railway level crossing without due care	3	..	3
Hit-run drivers (n.e.i.)	11	..	13
Other Causes	11	..	14
Total	1,077	80	1,851

Causes of Accidents—Pedestrians Responsible

The table below analyses road traffic accidents for which pedestrians were held responsible, in terms of the standard list of causes (after drivers of motor vehicles, pedestrians were reported responsible for the next most numerous group of accidents):

Road Traffic Accidents, Pedestrians Responsible, 1968-69
Classification According to Cause

Principal Causes of Accidents for which Pedestrians were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Walking across roadway without due care	58	14	47
Running across roadway	13	2	14
Passing behind or in front of moving or stationary vehicle or object	4	..	4
Stepping off kerb without due care	7	..	10
Intoxicated	9	1	8
Children under 7 years of age not under, or breaking away from, the supervision of an older person ..	29	6	25
Other causes	5	3	2
Total	125	26	110

Road Features and Accidents

The next table analyses all accidents according to the road features at the site. Most accidents occur on *straight roads*.

Features of Roadways on Which Accidents Occurred, 1968-69

Features of Roadways	Accidents Involving Casualties	Persons Killed	Persons Injured
At Intersections—			
Controlled	63	2	100
Uncontrolled	399	10	647
Other than at Intersections—			
Straight Road	502	47	703
Bend or Curve—			
View open	251	38	457
View obscured	158	18	269
Bridge, Culvert or Causeway	13	4	29
Steep Hill	2	..	2
Top of Hill	7	2	17
Railway Level Crossing	4	1	3
Other Locations	1	..	1
Total	1,400	122	2,228

Types of Accidents

Most accidents arise from collisions between vehicles, followed by vehicles overturning or leaving the road, as shown in the following analysis:

Types of Accidents, 1968-69

Types of Accidents	Accidents Involving Casualties	Persons Killed	Persons Injured
Collisions between Vehicles	823	49	1,435
Vehicle—			
Overturning or leaving road	335	41	513
Colliding with fixed object (incl. parked vehicle) ..	93	4	140
Colliding with animal	4	..	8
Colliding with pedestrian	141	28	128
Passenger accidents	4	..	4
Total	1,400	122	2,228

Types of Road Users Killed or Injured

In 1968-69, 52 drivers of motor vehicles out of a total of 122 fatalities, were killed in road traffic accidents. Of 2,228 persons injured, 1,016 were pedestrians and 942 drivers of motor vehicles. Further details follow:

Type of Road User Killed or Injured, 1968-69

Type of Road User Involved	Killed			Injured		
	Males	Females	Persons	Males	Females	Persons
Drivers of Motor Vehicles	46	6	52	767	175	942
Motor Cyclists	4	..	4	104	10	114
Pedal Cyclists	2	..	2	34	3	37
Passengers (all types)	24	13	37	521	495	1,016
Pedestrians	13	14	27	71	48	119
Other Classes .. ..	..	..	..	..	..	..
Total	89	33	122	1,497	731	2,228

Age and Responsibility

As shown in a previous table, drivers of motor vehicles (excluding motor cycles) were believed responsible for 1,077 out of the 1,400 accidents involving casualties which were reported to the police during 1968-69. The following table analyses the age and sex of the drivers responsible.

Road Traffic Accidents, 1968-69
Age and Sex of Drivers of Motor Vehicles Responsible

Age Group of Drivers Responsible (in Years)	Male Driver			Female Driver		
	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)
Under 21	258	21	465	25	..	40
21-29	293	25	502	33	2	67
30-39	140	10	226	24	1	53
40-49	97	4	167	20	..	32
50-59	81	8	129	18	1	30
60 and Over	55	5	84	15	1	27
Not Stated (b)	17	2	25	1	..	4
Total	941	75	1,598	136	5	253

(a) The age groups relate to the driver who may, or may not be, included in the casualty figures.

(b) Including accidents for which hit-run drivers were responsible.

Days of the Week on Which Accidents Occurred

The following table shows the day of the week on which accidents and casualties occurred:

Road Traffic Accidents, 1968-69
Days of the Week on Which Accidents Occurred

Day of the Week					Accidents Involving Casualties	Persons Killed	Persons Injured
Monday	..	..	..	..	137	10	222
Tuesday	..	..	..	..	123	11	168
Wednesday	..	..	..	..	152	13	209
Thursday	..	..	..	..	180	19	264
Friday	..	..	..	..	231	18	389
Saturday	..	..	..	..	370	34	613
Sunday	..	..	..	..	207	17	363
Total	..	..	..	..	1,400	122	2,228

Age and Sex of Road Users Killed

The next table shows the age and sex of the various types of road user killed:

Road Traffic Accidents, 1968-69
Age and Sex of Road Users Killed

Age Group (in Years)	Type of Road User Killed					All Road Users
	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Passengers (All Types)	Pedestrians	
MALES						
Under 7 .. ..	..	..	..	1	3	4
7-16 .. ..	..	..	..	..	..	..
17-20	7	..	..	7	..	14
21-29	17	2	..	5	1	25
30-39	7	1	..	4	..	12
40-49	3	1	1	4	1	10
50-59	8	..	..	1	2	11
60 and over	4	..	1	2	6	13
Not Stated .. ..	..	..	..	..	..	..
Total	46	4	2	24	13	89
FEMALES						
Under 7 .. ..	..	..	..	..	3	3
7-16 .. ..	..	..	..	1	1	2
17-20 .. ..	..	..	..	4	2	6
21-29	2	..	..	1	1	4
30-39	1	..	..	..	..	1
40-49 .. ..	..	..	..	1	..	1
50-59	1	..	..	3	..	4
60 and over	1	..	..	3	6	10
Not Stated	1	..	..	..	1	2
Total	6	..	..	13	14	33

CIVIL AVIATION IN TASMANIA

Introduction

On 16 December 1919 Lt Arthur Long of the Army Flying Corps crossed Bass Strait to Melbourne. Shortly afterwards he started an aerial newspaper-carrying business between Hobart and Launceston.

In 1932, Mr L. Johnson began a Launceston-Flinders Island service and, in the same year, Victor and Ivan Holyman began a similar service with a De Havilland Fox Moth.

The Holyman brothers entered into partnership with Johnson and, by 1933, the company was serving Smithton and King Island. In 1934, the company became Holyman Airways Pty Ltd and operated a Bass Strait service to Melbourne with DH 86 Dragon aircraft.

The first reliable interstate service commenced in 1936 when a DC 2 was introduced on the Victorian route.

During 1936, Holyman Airways and Adelaide Airways Ltd merged to become Australian National Airways Ltd and the new company operated services between all States. Services to and from Melbourne are now provided by Trans-Australia Airlines and Ansett Airlines of Australia (formerly known as Ansett-A.N.A.) from Hobart, Launceston, Devonport, Wynyard, Flinders Island and King Island.

Intrastate Services

Supplementary intrastate services have operated since May 1964, firstly by T.A.A. and secondly, by the Tasmanian Aero Club. The intrastate connections link Hobart, Launceston, Devonport, Wynyard, Queenstown and Strahan. Aerial Services of Tasmania now operate commuter services on the intrastate routes vacated by T.A.A.

Administration of the Air Navigation Act and Regulations in Tasmania

The Federal *Air Navigation Act* 1920-66 and associated regulations are administered for Tasmania by the Regional Director, Victoria-Tasmania region; the authority is the Civil Aviation Department. The department's more important functions include the provision and maintenance of government aerodromes, the licensing of aircraft and pilots, and a responsibility for supervising all aspects of air safety.

Classification of Flying Activities

Flying activities are classified by regulation into the following well-defined categories:

(a) *Private Operations*: Private use of aircraft may be gauged by the fact that there were 235 licensed *private* pilots in the State in 1969.

(b) *Aerial Work Operations*: These operations refer to aircraft used for *aerial* survey; spotting; agriculture; advertising; flying training; ambulance service; police or customs work; or for the carriage of goods owned by the pilot, the owner or the hirer for purposes of trade. Within Tasmania, there are four licensed flying training organisations and one aerial agricultural organisation carrying out most of the aerial work activities.

(c) *Charter Operations*: These refer to aircraft hired for passenger or freight movement, but not according to fixed schedules, or to and from fixed terminals. There were eight licensed charter operators based in Tasmania in 1968.

(d) *Commuter Operations*: These are charter operations to a fixed schedule, and to or from fixed terminals; they are authorised by an exemption granted under Air Navigation Regulations. Tasmania has one approved operator.

(e) *Regular Public Transport*: This refers to aircraft carrying freight and passengers according to fixed schedule, and operating on specified routes. All services of this kind are provided in Tasmania by T.A.A. and Ansett Airlines.

Tasmanian Aerodromes

The major aerodromes in Tasmania are owned and operated by the Commonwealth Government through the Department of Civil Aviation. The following describes both Commonwealth-owned and other aerodromes in use at 30 June 1970.

Hobart

Hobart airport, Commonwealth-owned, is eleven miles east of the city and ranks seventh in the volume of passengers handled at Australian terminals. It was completed in 1956. Extension and strengthening of the runway, taxiway and aprons to take Electra, DC9 and Boeing 727 aircraft at full weight was completed in 1966. The airport is equipped with complex aviation aids.

Launceston

This Commonwealth-owned airport, 10 miles south-east of Launceston, ranks next after Hobart in passenger volume but handles considerably more freight. It has a very adequate runway and a modern terminal building.

The area control centre provides air traffic control for the whole of Tasmania via repeater stations, south on Mt Wellington and north on Mt Barrow. The airport also is used for flying training and other light aircraft charter and aerial work operations.

Devonport

The Devonport Commonwealth-owned aerodrome was originally constructed in the early 1930s. In 1950 it was developed to handle DC3, DC4 and Viscount type aircraft and is now active with regular public transport, aerial work, charter, flying training and private operations.

Wynyard

The Wynyard Commonwealth-owned aerodrome has one sealed runway 4,400 feet and one 3,900 feet long for regular public transport operations, charter, aerial work and private operations.

King Island

King Island airport is a Commonwealth-owned aerodrome situated four miles north-east of Currie. It has three gravel runways, night lighting and radio navigational equipment.

Flinders Island

Flinders Island Commonwealth-owned aerodrome is situated three miles north of Whitemark. It has three grassed landing strips strengthened with some gravel and is equipped with aircraft navigation aids and radio.

Smithton

Situated two miles west of Smithton, this licensed aerodrome is owned by the Transport Commission. It has a sealed main runway plus lesser gravel strips and is used for itinerant charter and private flights.

Bridport

The Bridport licensed aerodrome, which is the responsibility of the Transport Commission, was developed for the purpose of air-freighting local produce, mainly fish, direct to Victoria. The landing strip consists of a grassed area 4,000 feet long by 400 feet wide.

St Helens

St Helens has a licensed aerodrome owned and operated by the Municipality of Portland. A grassed strip 3,900 feet long and 300 feet wide is of sufficient dimension to permit operations by DC3 and F27 type aircraft. The aerodrome currently serves the charter, aerial work and private operation requirements for the area and has a non-directional beacon for instrument navigation.

Queenstown

The Municipality of Queenstown provided an authorised landing area for light aircraft in 1937. In 1963, work was commenced on the construction of a runway suitable for the operation of DC3 type aircraft at Queenstown under the Local Ownership Plan; it was opened on 17 April 1966.

Strahan

The port of Strahan serves the West Coast of Tasmania and, in particular, the Queenstown and Zeehan areas. Opened for regular public transport operations in 1964, Strahan aerodrome was constructed under the Commonwealth Aerodrome Local Ownership Plan and is owned by the Municipality of Strahan.

Cambridge

This government aerodrome was constructed during the early days of aviation and comprised four runways. With hills in the near vicinity the site could not be developed and, following construction of the new Hobart Airport, was retained for flying training activities and light aircraft operations.

Aircraft, Passenger and Freight Movements

The following table shows the number of aircraft movements at the principal airports in Tasmania. For the purposes of the statistics in this table a take-off is regarded as one movement and a landing as another.

Aircraft Movements—Principal Airports

Year	Hobart	Launceston	Devonport	Wynyard	King Is.	Flinders Is.
1959-60	6,910	12,622	2,541	2,784	1,668	834
1960-61	7,356	12,950	2,395	2,457	1,541	938
1961-62	6,177	11,528	2,268	2,211	1,390	843
1962-63	6,278	11,062	2,014	2,102	1,314	746
1963-64	7,366	11,536	2,774	2,580	1,422	932
1964-65	8,303	12,600	3,436	3,627	1,384	1,060
1965-66	7,747	11,780	3,452	3,295	1,371	1,019
1966-67	8,013	10,819	3,950	3,945	1,299	885
1967-68	7,488	11,216	3,971	4,142	1,318	765
1968-69	7,674	11,319	3,779	4,187	1,232	685

The next table shows the volume of passengers and freight handled at each airport; the following definitions apply:

Passengers: The figures are for fare-paying passengers only at each airport and are the sum of embarkations and disembarkations.

Freight: The figures are the sum (in tons of 2,000 lb) of all revenue freight (including excess baggage) loaded and unloaded at each airport.

Passenger and Freight Movements—Principal Airports (a)

Year	Hobart	Launceston	Devonport	Wynyard	King Is.	Flinders Is.
PASSENGERS ('000)						
1965-66	167	155	48	41	15	11
1966-67	178	159	55	52	16	12
1967-68	182	156	61	55	16	10
1968-69	196	172	68	57	18	11
FREIGHT (SHORT TONS)						
1965-66	5,753	8,676	772	681	460	595
1966-67	6,454	8,362	743	880	455	496
1967-68	6,715	8,381	811	917	413	444
1968-69	6,932	8,434	431	1,420	492	346

(a) See definitions prefacing table.

Comparison with Principal Australian Airports

The next table shows the volume of activity at the principal Australian airports in terms of the number of passengers, freight and aircraft movements. Details of international services have been excluded so that comparisons are purely in terms of domestic traffic (international services are centred on Melbourne, Sydney, Brisbane and Perth).

**Australia—Principal Airports
Passengers, Freight and Aircraft Movements (a), 1968-69**

Airport	Passengers	Freight (Short Tons)	Aircraft Movements
Sydney	3,614,304	66,834	80,031
Essendon (b)	2,329,848	49,251	52,484
Brisbane	1,049,515	18,258	27,878
Adelaide	930,207	15,353	20,005
Perth	409,060	9,076	10,654
Canberra	461,888	3,333	17,537
Hobart	196,335	6,932	7,674
Launceston	171,612	8,434	11,319

(a) See definitions prefacing this section.

(b) Airport for Melbourne. The airport name 'Melbourne' is reserved for the recently constructed international airport.

Hobart ranks seventh in the number of passengers and freight tonnage handled by Australian airports. Launceston is the sixth busiest freight centre in the Commonwealth of Australia.

POSTAL AND TELECOMMUNICATION SERVICES

Development of Communication Services

General

The Commonwealth Postmaster-General's Department provides and controls postal facilities and telecommunication services in Tasmania. Basically the Australian Post Office consists of two services, *postal* and *telecommunications*, supported by engineering, supply, accounts, personnel and administration establishments.

The Postal Service

The first long-distance mail service in Australia was started between Hobart and Launceston in 1816, the carrier walking both ways and taking a fortnight for the round trip.

By 1835 Hobart Town and its environs was served by a thrice daily, two-penny post; today the service is once per day at a cost of six cents. The number of individual postal articles handled in Tasmania in 1968-69 amounted to 66 million as compared with more than 2,692 million articles handled by the Post Office throughout Australia.

All letter class mail, within the dimensions of *Post Haste*, to and from Tasmania is carried by air, free of airmail surcharge, while the bulk of 'Other Article' mail is received and despatched daily by ship. To help speed the handling of mail, the Post Office introduced *Postcode*, a four-figure postal location number designed to take full advantage of electronic mail coding equipment. An electronic mail exchange has been installed in Sydney and this type of exchange will be extended progressively to other State capitals.

A recent development of postal services has been the extension of *Priority Paid* mail. This service covers city and some suburban posting points and provides overnight deliveries to suburban areas of all capital cities, including Canberra.

Telecommunications

Hobart and Launceston were linked by a telegraph line in 1857 and two years later a Bass Strait cable was in operation, only to fail in 1861. By 1869 a second cable was laid and communication with overseas countries became possible in 1872 when the Overland Telegraph was established between Adelaide and Darwin.

The first telephone line in Tasmania linked Hobart and Mt Nelson signal station in 1880, both Hobart and Launceston having exchanges by 1883. However, no link with Victoria or overseas countries was provided until 1936.

Telephones: The Post Office is working towards a highly automated telephone system so that subscribers may make direct long-distance calls anywhere in Australia by simply dialling the required number. This system is called *Subscriber Trunk Dialling* (S.T.D.); it avoids the delays associated with manually-operated exchanges and charges are based on actual time used. S.T.D. has been introduced to many centres both inside and outside the State.

Telegraph: The teleprinter exchange (TELEX) had only one Tasmanian subscriber in 1957 but 148 were connected by 30 June 1969. The TELEX service is fully automatic and subscribers can now contact each other without an exchange operator's assistance. Calls can be made automatically to 28 of the 116 overseas countries tied in with Australian telegraphic services, while the remainder can be contacted through an exchange operator.

Construction: The sophisticated high-capacity broadband trunk network has been extended to all States. Spurs lead out to virtually every major centre and there are links with the *Seacom* and *Compac* cables connecting Australia with overseas countries; there are also links to the Overseas Telecommunications Commission's earth satellite stations at Carnarvon, Ceduna and Moree.

The national broadband network carries traffic including telephone calls, telegraph and telex messages, picturegram, radio and television programmes and data transmission. In recent years, the Post Office in Tasmania has had a policy of installing underground cables which have higher traffic densities. This policy, resulting in a reduction of overhead wires, is illustrated in the following table:

Cable and Aerial Wire Mileages at 30 June

Particulars	1965	1966	1967	1968	1969
Aerial Wire, Single Wire Mileage	58,480	57,046	55,403	48,398	45,732
Conductors in Cable, Single Wire Mileage (a)	438,012	518,003	575,073	633,709	698,168
Co-axial Cable, Tube Miles (a) ..	..	366	437	437	573

(a) Laid underground

Employment

The next tables analyse the total number employed by the Department in Tasmania:

Postmaster-General's Department
Persons Employed by Category at 30 June 1969

Full-time Employees (a)	No.	Others	No.
Permanent Officers	2,691	Non-Official Postmasters and Staff ..	347
Temporary & Exempt Officers (b) ..	779	Telephone Office Keepers	15
		Mail Contractors (c)	167
		Part-time Employees	35
	3,470		564

(a) Full-time employees are those directly under the control of the Department. The remainder shown as 'Others' provide services, which may or may not occupy their full time, under contract or in return for payments appropriate to work performed.

(b) Exempt staff are persons exempt from the provisions of the *Public Service Act* (Federal).

(c) Includes persons employed to drive vehicles.

Persons Employed at 30 June (a)—Summary

Year	Number	Year	Number
1960	3,995	1965.. ..	4,169
1961	4,066	1966.. ..	4,254
1962	4,077	1967.. ..	4,247
1963	4,144	1968.. ..	4,188
1964	4,184	1969.. ..	4,034

(a) Total full-time and other persons included in preceding table.

Revenue and Expenditure

The table that follows gives details of the financial operations of the Department in Tasmania. The following points of explanation are necessary:

Cash Receipts: Prior to 1968-69, cash receipts were paid into the Commonwealth Consolidated Revenue Fund; in 1968-69, they were paid into the Post Office Trust Account which forms part of the Trust Fund of the Commonwealth. In addition, receipt classifications have been reconstituted and cannot be compared with those for earlier years.

Cash Expenditure: Up to, and including 1967-68, cash payments for 'Non-capital Works' and 'Capital Works' were made from the Commonwealth Consolidated Revenue Fund. In 1968-69, cash expenditures were made from the Post Office Trust Account and, as in the case of cash receipts, the new expenditure classifications are not comparable with those used in previous years. Interest and superannuation liability are not brought to account in this table.

Postmaster-General's Department—Financial Operations in Tasmania, 1968-69 (a)

Cash Receipts (b)		Cash Expenditure (c)	
Particulars	\$'000	Particulars	\$'000
Postal	3,677	Salaries and Wages	12,115
Telephone	10,504	Material	4,963
Telegraph	297	Carriage of Mails by Contractors	317
Proceeds of Sales	244	Buildings, Sites and Properties..	747
Recoverable Works	556	Accommodation Services ..	485
International Services	38	Other (d)	1,119
Total	15,317	Total	19,747

(a) Not comparable with revenue and expenditure details published for previous years; see introduction to this table.

(b) Excludes revenue earned but not actually received.

(c) Excludes expenditure incurred but not actually paid.

(d) Includes Travelling Allowances, Repairs to Plant, Engineering Works and Hire of Vehicles.

Operations of the Department

Apart from its obvious role of providing communication facilities through various media, the Department provides a money order and postal order service and also acts as an agent for a number of other instrumentalities in transactions which include: savings bank deposits and withdrawals; payment of pensions and allowances; War Service Homes repayments; sale of State duty stamps, etc.

Money Orders: An order may be obtained for sums up to \$80 on a single order. Orders for overseas are limited to \$50, and a remitter may send only one such order in any week.

Postal Orders: A system of *postal orders* replaced a system of *postal notes* from 1 June 1966 and from October 1967 postal orders in denominations ranging from 10 cents up to \$8 have been available; they provide security since they can be traced and may also be 'crossed' like a bank cheque. Duplicates can be issued in certain circumstances.

Postal Services

The following table shows the volume of mail handled and the monetary transactions carried out through use of the Post Office in Tasmania.

Postal Services

Particulars	Unit	1964-65	1965-66	1966-67	1967-68	1968-69
Post Offices—Official	no.	54	54	55	56	53
Non-official	no.	440	433	421	389	344
Postal Traffic (a)—						
Letters, Postcards, etc.	'000	49,108	51,710	55,594	55,273	56,516
Newspapers, Books, etc.	'000	9,549	10,309	10,531	10,141	9,425
Parcels	'000	263	288	302	303	282
Registered Articles	'000	371	375	379	349	325
Money Orders—						
Issued—No.	'000	366	353	364	322	(b) 271
Value	\$'000	9,356	11,576	12,690	13,468	(b) 5,870
Paid —No.	'000	263	274	298	266	(b) 216
Value	\$'000	8,768	10,902	12,042	12,727	(b) 5,220
Postal Orders (c)—						
Issued—No.	'000	368	356	344	350	378
Value	\$'000	378	384	467	599	731
Paid —No.	'000	206	206	208	201	212
Value	\$'000	212	213	268	351	448

(a) Number of separate articles handled.

(b) Prior to 1968-69 figures included Official Money Orders used in bringing to account Telephone Account Collections and War Service Homes Repayments. This practice was discontinued towards the end of 1967-68.

(c) Prior to 1 June 1966, the figures refer to a similar system using *postal notes*.

Telephone and Telegraph Services

The next table shows the extent to which telephone and telegraph services in Tasmania are used:

Telecommunications

Particulars	Unit	1965-66	1966-67	1967-68	1968-69
Telephone—					
Automatic Service Subscribers	'000	50	53	57	60
Manual Service Subscribers	'000	12	12	10	10
Subscribers with access to S.T.D.	'000	6	7	39	43
Automatic Exchanges	no.	137	140	148	153
Manual Exchanges	no.	212	191	164	135
Value of Calls Made—					
Local (including S.T.D.)	\$'000	1,632	2,186	2,537	2,989
Trunk	\$'000	2,388	2,791	2,904	3,046
Telegraph—					
Phonograms Lodged	'000	317	336	340	346
All Telegrams Lodged (a)	'000	610	640	596	586

(a) Includes telegrams lodged by telephone (i.e. phonograms).

Telephones: The following table further analyses the telephone services in Tasmania, showing the dissection between *business* and *residential*:

Telephone Services at 30 June: Operating Services
(’000)

Particulars	1965	1966	1967	1968	1969
Services in Operation—					
Business	30.6	31.4	32.4	32.4	33.3
Residential	27.4	29.5	31.3	33.4	35.6
Public Telephones	1.1	1.1	1.1	1.2	1.1
Instruments in Operation ..	82.4	86.1	88.9	93.0	98.3

RADIOCOMMUNICATION

Stations in Tasmania

The section which follows relates to radiocommunication (radio telegraph and radio telephone) stations only; particulars of broadcasting stations and of broadcast listeners’ licences are specifically excluded and are dealt with in a subsequent section.

The following table shows the number of radiocommunication stations and their categories over a number of years:

Number of Authorised Radiocommunication Stations at 30 June
(Two-way Services)

Particulars	1965	1966	1967	1968	1969
Fixed Stations (a)—					
Aeronautical	9	8	8	8	8
Outpost (b)	17	16	19	19	17
Other	38	42	62	57	61
Total	64	66	89	84	86
Land Stations (c)—					
Aeronautical	8	7	7	7	7
Base Stations for—					
Land Mobile Services ..	243	266	303	319	350
Harbour Mobile Services ..	6	13	13	13	14
Coast (d)	21	22	22	24	29
Special Experimental ..	16	14	17	17	17
Total	294	322	362	380	417
Mobile Stations—					
Aeronautical	32	24	26	26	32
Land Mobile Services ..	1,650	1,945	2,385	2,588	2,985
Harbour Mobile Services ..	50	59	68	75	65
Outpost	35	58	67	66	71
Ships	279	303	370	415	483
Total	2,046	2,389	2,916	3,170	3,636
Amateur Stations	170	174	194	222	238
Grand Total	2,574	2,951	3,561	3,856	4,377

(a) For exchange of radio messages with other similar stations.

(b) Stations established in remote localities for communication with control stations, e.g. the lighthouse service.

(c) For exchange of radio messages with mobile stations.

(d) Land stations for communication with ocean-going vessels.

To operate a radio transmitter as previously described, it is necessary to obtain a licence from the Postmaster-General's Department which is responsible for frequency allocation and for certain inspectorial functions. In the previous table, the term 'authorised' refers to equipment licensed by this authority.

Some examples of the use to which this form of communication is put, include: (i) the police networks for intrastate signals and for link with police cars; (ii) coastal radio service to ships at sea (the same service provides links with outpost transmitters in the State's remote areas, e.g. Port Davey); (iii) army network with direct link to Melbourne; (iv) fire brigade network operating in the area controlled by each authority; (v) fishermen's network with base stations at Triabunna, Dunalley, Bicheno, St Helens, Lady Barron, Currie, Stanley and Strahan; (vi) lighthouse network (the source of weather reports at remote coastal stations); (vii) special purpose networks of various authorities, e.g. Hydro-Electric Commission, Forestry Commission, ambulance services, etc.; (viii) marine boards' V.H.F. networks (on single international frequency) for ship-to-shore link with overseas vessels; (ix) the 'mutton birders' network—operating from Whitemark on Flinders Island when the 'birders', in the season, inhabit the otherwise deserted Bass Strait islands; (x) mine networks, e.g. central control linked to outposts engaged in blasting; (xi) freighting services and taxi networks, etc.

BROADCASTING AND TELEVISION

General

In Australia, broadcasting and television services are provided both from commercial and Commonwealth Government transmitters; the Federal *Broadcasting and Television Act 1942-69* governs the operation of services designated the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service.

The National Services

The national services (both broadcasting and television) are provided by the Australian Broadcasting Commission which has sole responsibility for programme material; the actual transmitters are operated by the Postmaster-General's Department. Owners of broadcast and television receivers are required to pay annual licence fees to the Postmaster-General's Department, and this revenue is used to help pay the cost of operating the national services.

The Commercial Services

The commercial services (both broadcasting and television) are operated under licences granted by the Postmaster-General, who, in exercising his licensing powers, takes into consideration recommendations made by the Australian Broadcasting Control Board. The revenue of the commercial services is obtained from advertising. Licence fees, payable to the Postmaster-General's Department, are charged on a sliding scale from 1 per cent to 4 per cent of gross advertising revenue.

The Australian Broadcasting Control Board

Although the commercial services are operated as private enterprise undertakings, the Board exercises control in certain fields, by prescribing programme standards, laying down rules for advertising time and advertising content, determining hours of operation, and by establishing and supervising

operational standards. The Board allocates frequencies for transmission and investigates applications for the establishment of stations. In all these functions, it works under the ministerial jurisdiction of the Postmaster-General.

Hours of Transmission

At 30 June 1970, eight commercial broadcasting stations were operating in Tasmania; two in the Hobart area each averaging $133\frac{1}{2}$ hours weekly; six elsewhere in the State averaging $119\frac{3}{4}$ hours weekly. The corresponding figures for the two commercial television stations were $78\frac{1}{2}$ hours weekly in the Hobart area, and 69 hours in the Launceston area.

Programme Standards—Commercial Stations

Broadcasting Standards

Licensees are required to provide programmes in accordance with standards determined by the Australian Broadcasting Control Board. These standards contain requirements for the acceptability of programme material and advertising. There are special provisions dealing with family and children's programmes designed to ensure that all programmes broadcast at times when large numbers of children and young persons are likely to be listening will be suitable for this category of listener. Special provisions relate to the duration and suitability of advertisements: with regard to their duration the standards require, for example, that advertisements in a sponsored programme should not exceed 20 per cent of the programme time and that in the case of programmes during which spot advertisements are broadcast, advertisements should not exceed 30 per cent of programme time. Not more than 18 minutes of spot advertising may be included in any period of 60 minutes.

Also under the *Broadcasting and Television Act* 1942-69, licensees are required to broadcast religious services, or other matter of a religious nature during such periods as the Board determines. The minimum time set by the Board is one hour per week but many stations are providing, free of charge, considerably more time than that required for religious broadcasts. The Act also provides that licensees shall, as far as possible, use the services of Australians in the production and presentation of programmes, and that not less than five per cent of the time occupied by the programmes of stations in the broadcasting of music shall be devoted to works of Australian composers.

Television Standards and Australian Content

The Board has prescribed programme standards for commercial television and these, as in the case of broadcasting, contain requirements for the acceptability of programme material and advertising. The standards contain special provisions designed to protect the interests of children and young persons with respect to televising of material prior to 7.30 pm. on any day during periods when there are likely to be large numbers of this category of the population viewing. The advertising standards relate to the suitability, number, content and duration of advertisements: with regard to their duration, the standards make the distinction between prime time (7.00 pm. to 10 pm.) and non-prime time. Broadly, advertisements should not occupy more than 11 minutes in each clock hour in prime time and not more than 13 minutes in each clock hour in non-prime time.

Since July 1967, all metropolitan commercial stations (and all country commercial stations operational for three years) have been required to transmit Australian-originated programmes for 50 per cent of transmission time. This Australian material must be featured in peak viewing time (7.00 pm to 9.30 pm) for at least 18 hours in each four weeks; it must appear for at least two hours

per week between 7.00 pm and 9.00 pm. Australian drama must be featured for at least two hours per month. Special credit is given in calculating Australian programme percentages for drama written by Australians; local production of overseas dramas; Australian-designed children's programmes. Limited 'Australian credit' is allowed for programme produced in the British Commonwealth.

Category of Television Programmes

The following table shows, as varying proportions of transmission time, the types of programme televised in the Hobart area:

Category of Television Programmes—Hobart, 1969-70 (a)
Proportion of Transmission Time

Programme Category	Hobart Commercial Programmes	Hobart National Programmes
	per cent	per cent
Drama	43.7	29.4
Light Entertainment	22.7	10.8
Sport	8.3	8.2
News	8.6	7.4
'Family'	6.2	6.5
Information	1.3	3.9
Current Affairs	3.2	9.9
The Arts .. .. .	..	2.1
Education	6.0	21.8
Total	100.0	100.0

(a) Source: Australian Broadcasting Control Board.

Film Classification

Films imported for televising are classified as suitable for unrestricted viewing (G), not suitable for children (A) and suitable for adults only (AO). Classifications are advertised before showing.

Television Stations in Operation

The next table gives details of the television stations in operation:

Television Stations in Operation, 30 June 1970

Call Sign and Channel	Area	Transmitter Location	Height Above Sea Level— Top of Aerial (ft)	Hours of Service (Weekly)
NATIONAL				
ABT 2	Hobart	Mt Wellington	4,410	82.50
ABNT 3 (a) ..	NE. Tasmania	Mt Barrow	4,780	82.50
COMMERCIAL				
TVT 6	Hobart	Mt Wellington	4,340	78.50
TNT 9	NE. Tasmania	Mt Barrow	4,654	69.00

(a) Transmits programmes originating from ABT2.

Relay of Television Programmes from Other States

Tasmania is linked with Victoria by a broadband radio link installed by the Postmaster-General's Department which enables the direct relay of television programmes from the mainland States. During 1969-70, the link was used for television relays on a number of occasions; the most notable of these being the coverage of the visit of the Royal family and Pope Paul VI.

Microwave Links and Intrastate Relays

The prime sources of programmes in Hobart are the commercial and national studios which are linked to their Mt Wellington transmitters (TVT6 and ABT₂) by micro-wave links; the commercial studio in Launceston feeds programmes to its Mt Barrow transmitter (TNT9) by the same method. As there is no national studio at Launceston, the transmitter on Mt Barrow (ABNT₃) relays the Hobart national programmes through the broadband radio link. This service is also available to commercial stations.

Television Translator Stations

Tasmania, due to its terrain, has areas where television reception direct from the Mt Wellington or Mt Barrow transmitters is either difficult or impossible. To provide good reception in such areas, translator stations, which are low-powered stations receiving signals from a parent station and re-transmitting on another channel to areas with poor reception, have been installed as follows:

Television Translator Stations in Operation at 30 June 1970

Area Served	Parent Station		Local Channel	
	National	Commercial	National	Commercial
Queenstown-Zeehan	ABT2	TVT6	4	8
Rosebery-Renison Bell	ABT2	TVT6	1	10
Taroona .. ..	..	TVT6	..	8
Swansea-Bicheno .. ..	..	TVT6	..	8
Smithton-Stanley	ABNT3	TNT9	1	6
Gowrie Park	ABNT3	TNT9	11	1
South Launceston	ABNT3	TNT9	1	11
St Marys-Fingal Valley	ABNT3	TNT9	1	11
Maydena .. ..	..	TVT6	..	8
Waratah	ABNT3	TNT9	2	10
Savage River-Luina	ABNT3	TNT9	4	7
Strahan	ABT2	..	10	..
Strathgordon .. ..	..	TVT6	..	8

De-icing

In view of the temperature and weather conditions existing at Mt Wellington and Mt Barrow, precautions have been necessary to prevent the formation of ice on the aerial elements and the resultant danger of damage from falling ice.

In the case of the aerial at the Hobart national station (ABT₂, Mt Wellington), the aerial elements are heated by mains power which is switched on automatically by means of a thermostat when the temperature falls below freezing point. In the case of the Hobart commercial station (TVT6, Mt Wellington), the junctions between the coaxial feeder lines and the aerial elements are protected by small pastic covers. In the case of the Launceston (Mt Barrow) commercial station TNT9 and national station ABNT₃, the whole of the aerial is covered by a plastic cylinder. The lower part of the ABNT₃ mast is metal-sheathed for 190 feet to ward off ice which falls from the plastic cylinder and which could damage the mast.

Broadcasting Stations in Operation

The following table gives details of the broadcasting stations in operation:

Broadcasting Stations in Operation at 30 June 1970

Call Sign	Classification	Location	Hours of Service (weekly)
7ZL	National	Hobart	125.75
7ZR	National	Hobart	125.75
7NT (a)	National	Launceston	125.75
7QN (a)	National	Queenstown	125.75
7HO	Commercial	Hobart	140.00
7HT	Commercial	Hobart	131.25
7AD	Commercial	Devonport	116.50
7BU	Commercial	Burnie	113.50
7EX	Commercial	Launceston	163.00
7LA	Commercial	Launceston	126.50
7QT	Commercial	Queenstown	98.50
7SD	Commercial	Scottsdale	100.50

(a) Transmits, in the main, programmes originating from 7ZL and 7ZR.

Although there are areas of poor reception due to difficult terrain, most of Tasmania receives a satisfactory broadcasting service from one or more of the above stations. In addition, the Northern part of the State receives a service from some mainland stations.

The structure and population distribution in the state has given rise to a regional pattern of broadcasting stations with concentrations in Hobart and Launceston and outlying stations in the north-east, north-west and west.

Listening and Viewing Licences*Revenue from Licences*

The revenue from licences in force in Tasmania for the last decade is shown in the following table. From 1 April 1965 three types of licences: listener's; viewer's and combined were issued. The revenue from each type of licence is not available separately after 1963-64.

Broadcast and Television Licences—Revenue (a)
(\$'000)

Year	Type of Licence (b)		Total Revenue
	Listener's	Viewer's	
1960-61	382	182	564
1961-62	370	276	645
1962-63	358	426	784
1963-64	356	510	865
1964-65	1,005		1,005
1965-66	1,047		1,047
1966-67	1,127		1,127
1967-68	1,157		1,157
1968-69	1,314		1,314
1969-70	1,397		1,397

(a) From 1964-65 no breakup is available.

(b) Includes the 'combined licence' from 1 April 1965.

Details of Rates

In general, all persons owning a radio or television set (or both) are required to pay an annual licence fee. Definitions used in the table follow.

Pensioner Rate: Concession rates apply to certain classes of pensioners and licences may be granted free of charge to blind persons over 16 years of age, or to a school. The rates applicable are: Broadcast Receiver, \$1.00; Television Receiver, \$3.00; Combined, \$4.00.

Hirer's Licence: Each broadcast or television receiver let out on hire, except those under hire purchase contracts, must be covered by a hirer's licence held by the person or firm from whom the receiver is hired. Rates: Broadcast Receiver, \$6.50 (Pensioner rate \$1.00); Television Receiver, \$14.00 (Pensioners \$3.00); Combined, \$20.00.

Lodging House Licence: Owners of hotels, motels, guest houses, furnished premises, etc. are required to hold a licence for every broadcast or television receiver provided for the use of guests, lodgers and tenants. Rates: Broadcast Receiver, \$6.50; Television Receiver, \$14.00; Combined, \$20.00.

Licences in Force

The following table shows the number of listeners' and viewers' licences in force in Tasmania from 1925:

Licences in Force (a)—Listeners' and Viewers' Licences from 1925

At 30 June	Broadcast Listeners'	Television Viewers'	Combined (a)
1925	567	..	..
1930	6,048	..	..
1940	42,191	..	..
1950	64,369	..	..
1960	78,900	4,662	..
1965 <i>r</i>	62,943	47,173	12,906
1966 <i>r</i>	32,317	10,309	55,778
1967	21,917	<i>r</i> 10,708	60,405
1968 <i>r</i>	14,179	11,532	63,049
1969 <i>r</i>	12,232	11,896	66,320
1970	10,074	12,317	68,439

(a) The combined receiving licence was introduced in April 1965, to be held by those persons owning both a broadcast and a television receiver at the same address. Separate licences are still available for persons owning only one type of receiver.

Licences and Receivers

The number of receivers in use, both for broadcasting and television, exceeds the number of licences, since the householder or members of his family may operate any number of receivers normally kept at the address shown on the licence. (This concession does not apply to lodgingshouses.)

Although television transmission did not begin in Tasmania before the first half of 1960 (with ABT2 and TVT6 in Hobart), a few licences were held in the northern areas of the State as early as 1957; the owners of these receivers were able to tune to programmes originating in Victoria.

Zones

The rates for broadcast listeners' licences quoted in a previous table are those applicable to Zone 1 which includes areas within 250 miles of specified broadcasting stations. Zone 2 is defined as the remainder of Australia and persons living in this zone can obtain broadcast listeners' licences at a reduced rate. All Tasmanians live in Zone 1.

Appendix A

PUBLICATION OF TASMANIAN STATISTICS

HOW TO OBTAIN CURRENT PUBLICATIONS

General

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is located at *Kirksway House, corner of Kirksway Place and Montpelier Retreat, Hobart*. Requests for statistical publications can be made by calling at this address; by phoning, *Hobart 202122*; or by writing to the *Deputy Commonwealth Statistician, G.P.O. Box 66A, Hobart, 7001*.

Service to the public is not restricted to the distribution of publications. If no publication adequately covers the subject matter of the enquiry, then a special extraction of the data required may be undertaken if they are available from the basic records held in the office.

Historical

The first Government Statistician in Tasmania was E. C. Nowell who took up duty in 1867. Before this appointment, statistics had been published in the official 'Blue Books' compiled by the Colonial Secretary during the period 1822-1855, and in volumes entitled *Statistics of Tasmania* after self-government was granted.

By the *Commonwealth and State Statistical Agreement Act 1924*, the Tasmanian Parliament ratified an agreement for the establishment of an office of the Commonwealth Bureau of Census and Statistics, such office to meet the statistical needs of the State Government; provision was made for the Deputy Commonwealth Statistician, a Commonwealth officer, to hold at the discretion of the State Government, the title of (State) Government Statistician. The first officer appointed in this way was L. F. Giblin, M.C., D.S.O., who had previously been the State Government Statistician. (It was not till the late 1950s that similar arrangements were made in the other Australian States.)

Statistics from 1804

In the Archives Office of Tasmania, the following series are available:

- (i) Official 'Blue Books' for period 1822-1855.
- (ii) *Statistical Account of Van Diemen's Land or Tasmania, 1804 to 1854* compiled by Hugh M. Hull (Office of the Colonial Secretary).
- (iii) *Statistics of Tasmania*—annual publications from 1856 to 1922-23.

- (iv) *Statistics of the State of Tasmania*—annual publications commencing 1923-24 and continuing to 1967-68. (Copies of these volumes are held at the University Library, the State Library in Hobart, the Public Library in Launceston and the Tasmanian Office of the Commonwealth Bureau of Census and Statistics.) Although the bound volume has been discontinued as from the 1967-68 issue, the component parts are still published as separate bulletins (these are listed in the table of 'Printed Publications' in the following section).

Copies of publications listed from (ii) to (iv) inclusive are available for inspection at the Tasmanian Office of the Bureau.

Current Publications of the Tasmanian Office

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is engaged in a continuous publication programme, the statistics appearing in either printed or mimeographed form.

In general, the mimeographed publications (which are obtainable free of charge) have been compiled to make information available at the earliest possible moment. Printed publications contain information in very much greater detail but, because of the inevitable delay imposed by manuscript preparation and the printing process, may be issued a year later than the period to which they refer. (The printed *Monthly Summary of Statistics* is an exception and the 'lag' is no more than about two months.)

Printed Publications

The following table sets out details of all printed publications issued by the Tasmanian Office:

Printed Publications Issued by the Tasmanian Office

Title	Frequency	For Issue in 1971	Price	
			Excluding Postage (\$)	Including Postage (\$)
Tasmanian Year Book	Annual	1971	2.00	2.51
Monthly Summary of Statistics	Monthly	(a)	0.15	0.21
Pocket Year Book of Tasmania	Annual	1971	0.15	0.27
Demography	Annual	1969	0.60	0.78
Trade and Shipping	Annual	1968-69	0.40	0.52
Labour, Wages and Prices	Annual	1968-69	0.60	0.78
Primary Industries and Meteorology	Annual	1968-69	0.70	0.88
Building Industry	Annual	1968-69	0.20	0.32
Finance	Annual	1968-69	0.60	0.78
Social	Annual	1969	0.20	0.32
Statistical Summary	Irregular	1968-69	0.40	0.52

(a) Published one or two months after the most recent month for which figures are available.

Mimeographed Publications

The next table gives details of all mimeographs produced by the Tasmanian Office:

**Mimeographed Publications Issued by the Tasmanian Office
(Free of Charge)**

Subject Matter	Title of Publication	Frequency
Alcoholic Liquor	Wholesale Sales and Stocks of Wine and Spirits; Consumption of Alcoholic Liquor	Annual
Building	Building Approvals Building Statistics	Monthly Quarterly
Insurance	Fire, Marine and General Insurance	Annual
Municipal Statistics	Compendium of Municipal Statistics .. Local Government Finance	Irregular (Last Issue, 1968) Annual
Population	Population in Local Government Areas .. Vital and Population Statistics	Annual Quarterly
Production (General)	Miscellaneous Indicators of Productive Activity	Monthly
Production (Primary)	Crops Dairy Industry Farms, Farm Population, Employment, Irrigation and Machinery Used Fruit Production Hop Production Livestock Livestock and Wool Production (Preliminary Figures) Meat Production Potato Production Poultry Slaughtering and Chicken Hatching .. Tractors on Rural Holdings Value of Production (Primary) Wool Production Statistics	Annual Annual Annual Annual Annual Annual Annual Annual Annual { Annual Monthly Triennial Annual Annual
Production (Secondary)	Factory Production Sawmill and Plywood Mill Statistics	Annual Monthly
Retail Trade	Retail Sales of Goods	Quarterly
Towns	Index of Tasmanian Towns	Irregular
Trade	Trade (Overseas) Trade (Overseas and Interstate) by Sea and by Air	Annual Annual
Transport and Traffic Accidents	Motor Vehicle Registrations Road Traffic Accidents	Monthly Quarterly

**TASMANIAN STATISTICS IN CENTRAL OFFICE
PUBLICATIONS**

General

Although publications of the Tasmanian Office of the Bureau of Census and Statistics make available statistics on many aspects of the State, there are some fields in which additional or more frequent information is available in publications of the Central Office.

How to Obtain Central Office Publications

Central Office printed publications may be *bought* direct from the Government Printer, Canberra and from the Tasmanian Office of the Bureau of Census and Statistics; they may also be ordered from leading booksellers in the principal centres. A standing order may be placed with the Australian Government Publishing Service, Canberra, with whom a credit account may be arranged.

In addition to printed publications for which a charge is made, there are other Central Office publications (mimeographed, etc.) which may be obtained free of charge from the Commonwealth Statistician, Canberra.

Subject Matter of Central Office Publications

The fields of statistical enquiry covered in Central Office publications are very wide and the best way to obtain a guide to the material available is to write to: *The Commonwealth Statistician, Canberra* and ask for *Publications of the Commonwealth Bureau of Census and Statistics*. Copies of this guide are also available at the Tasmanian Office of the Bureau. This free 52-page guide lists the publications of the Central Office and of the State Offices; in addition, it contains a subject index.

Readers with interest in a particular field are invited to call at, or write to, the Tasmanian Office which is in a position to give advice on what publications are available.

Appendix B

CHRONOLOGY

THE YEAR 1970

Record to 16 November 1970

Morning Cloud winner of Sydney-Hobart yacht race. International Cadet World Championships held on Derwent. University to grant Matriculation 'by compensation'. New \$1m bulk cargo berth completed by Burnie Marine Board. Tasmanian primary schools to begin teaching metric system. Bones of young Tasmanian Aboriginal found near Marrawah on North-West Coast. Port of Strahan used for last time following cessation of copper smelting at Mt Lyell. Contract let for a new main shaft at Mt Lyell. Re-opening of Perth bridge following ten months of reconstruction. Concern shown at need to conserve Southern Rock Lobster (crayfish) industry. Rumours of nickel discoveries in W.A. by Tasmanian-based mining company, Tasminex N.L. Work started on Eastern Expressway from Rosny to Hobart Airport. Sydney archaeologist inspected remains of Wybalenna aboriginal settlement on Flinders Island; excavation of site to commence early in 1971. National Trust opened appeal for funds for restoration of Wybalenna Chapel. Matriculation colleges announced for Devonport and Burnie. UNESCO expert strongly urged preservation of Aboriginal rock carvings. Fires in Lake King William area destroyed 6,000 acres of timber and button grass. Government to provide \$20,000 for bush fire memorial in Kingborough Municipality. Northern branch of Conservation Trust to undertake two-year survey aimed at protecting 'scenic beauty and recreational areas' of the Tamar Valley. Season for deer-shooting reduced by four weeks; licence fee increased from \$1 to \$5. Official opening of Marine Research Laboratory at Tarooma. Bridge over Arthur River opened to traffic replacing vehicular punt. \$1m housing project announced for Latrobe. Comalco (Bell Bay) Ltd became a public company. Broadband telecommunications system established between Smithton and King Island (provides telephone and television relay facilities). Pay rise for Tasmanian Police. Cabinet met at Burnie; only its second meeting outside the Hobart area. Fire destroyed second largest sawmill in Smithton district. New gaol (a farm-type unit) to be built at Launceston. Ruling by High Court invalidated large section of the Victorian and W.A. receipts tax acts. Paterson Barracks (one of Australia's oldest military establishments) badly damaged by fire. First pyrites railed from Rosebery to Burnie sulphuric acid plant. Representatives from Italsider (Italian Steel combine) had talks with Government regarding iron ore, zinc and nickel purchases. Pay increases received by local government employees. Waterside strike in Sydney caused 14th cancellation of *Empress of Tasmania* sailing in 12 months; substantial loss to Tasmanian tourist industry. A.M.P. Society moved into a new sixteen-storey building in centre of Hobart. Trading bank lending rates increased by 0.5 per cent to 8.25 per cent. Work commenced at Selfs Point on second stage of Hobart's sewerage treatment scheme. Butter and Cheese Factories' Association to supply butter to Education Department cooking classes at 30c lb for promotional purposes. Tenders called by Sea Fisheries Division of the Department of Agriculture for a new patrol and research vessel. Closure of diversion tunnel created a new lake behind

the Wilmot dam. Hobart Area Transportation Study being updated at a cost of \$25,000. Cabinet established an age limit of 70 years on members of government boards and authorities (except where specialised knowledge was involved). Weekend gaol for lesser offenders to be introduced. Historic Dora Turner School at Battery Point destroyed by fire. Cost of proposed four-lane Gorge Bridge in Launceston estimated at almost \$5m. Attendance of 68,500 people at Blue Gum Festival Village Fair. Burnie's new \$80,000 court house, circular in design, opened by Governor. Government to prosecute unlicensed fishermen. Commercial mutton bird licences increased from \$5 to \$15. Warsaw Philharmonic Orchestra performed in Hobart City Hall. Wrest Point Casino exempted from building regulations limiting the height of construction. Federal Hotels Ltd leased Hadleys Hotel. Roman Catholic nun appointed as lecturer in Medicine at University of Tasmania. E.Z. Company to establish \$6.3m residue treatment plant at Risdon, to be in operation in mid-1971. High Court ruled that the Trade Practices Tribunal is a valid body to make determinations in Tasmania (following challenge by Tasmanian Breweries Pty Ltd). No mining exploration licences to be granted for Macquarie Island (a flora and fauna reserve). Reflectorised number plates introduced. Royal Family tour Tasmania. \$2.5m allocated for buildings at University during 1970-72 triennium. Interest rates on housing loans increased. Forester kangaroo in danger of extinction on Tasmanian mainland, according to conservationists. Royal Hobart Hospital celebrated 150th anniversary. 1969 a record year for Tasmanian mineral production; further significant expansion anticipated. Death of world-renowned children's authoress, Nan Chauncy. Premier agreed that a second Derwent Bridge at Hobart should be 'a matter of some urgency'. Death of Mr Wilfred Asten, noted Tasmanian educationalist and past international president of the United Nations Association. Russian fishing boats sighted in Tasmanian waters. Controversy over Hobart City Council election procedures. Penalties under Tasmanian *Oil Pollution Act* substantially increased. National conventions held in Hobart by Lions and Apex service organisations. Record Australian price of \$10,500 paid for Tasmanian Angus stud bull from the Connorville Estate. Commonwealth Government lifted ban on export of Snoek (Barracouta); benefit to Tasmanian fishing industry. North-West Acid Pty Ltd opened at Burnie. Victims of crimes of violence to be paid up to \$2,000 compensation by State Government. H.E.C. completed 60 ft high coffer dam on Gordon River in four days at the rate of 6 to 8 inches per hour; the 'slipform' process was used for the first time for dam construction in Australia. Oil paintings by convict artist William Gould brought record Australian prices at Launceston auction. Sir Basil Osborne retired as Lord Mayor of Hobart after 10½ years service. H.E.C. to install \$100,000 worth of equipment to improve reliability of electricity supplies to rural areas. Hobart police supplied with portable two-way radios. Egg Board of Tasmania reconstituted. Australian Medical Association agreed to co-operate with Federal Government in the implementation of the new health scheme. Uncensored version of controversial play 'Boys in the Band' had successful Hobart season. Parliament legislated to introduce permanent daylight saving from the last Sunday in October to the second Sunday in March. Sixth Field Regiment, Royal Australian Artillery (based at Launceston) given Freedom of the City of Launceston as part of its 110th birthday celebrations. Radio station 7LA opened a satellite studio at George Town, the first of its kind in Tasmania. Completion of microwave telecommunications link with W.A. allows direct television relays across the continent; Tasmanian now able to make STD telephone calls to W.A. Bruny Island ferry service made a loss of almost \$49,000 in 1968-69. Longford isolated by extensive floods. H.E.C. power loan closed undersubscribed; \$480,700 raised instead of \$750,000. 'Tasmanian Industry Association for Environmental Control' formed to help combat pollution. Tasmania defeated Western Australia

Australian Rules football team by two points. Second art gallery in Salamanca Place opened. In London, Tasmanian apple prices fell to 2-3/- below N.Z. and South African prices. Milk in 2-pint cartons on sale in Southern Tasmanian shops. British General Elections won by Conservative Party; the Hon. Edward Heath became Prime Minister. Government decided against subsidising an Eastern Shore ferry service. Seat-belt Campaign Week held in June. \$6m port expansion plans announced by Hobart Marine Board. Formation of 'crime prevention advisory council' consisting of business, government and industrial interests. All States except Queensland accept principle of reduction in the voting age to 18 years. National television translator station to serve the West Coast, commissioned. H.E.C. 'mole', once used for tunnel excavation at Poatina, bought by W.A. prospecting firm. Government to pay \$200,000 subsidy to pea-growing industry in 1970-71. University's new neutron monitoring station opened on Mt Wellington, replacing the station destroyed by 1967 bushfires. Launceston to extend its one-way streets system in order to alleviate traffic congestion. Telecast of Legislative Council proceedings appeared as part of Australia's first nationwide direct television relay. Church leaders in Hobart formed a joint commission to handle religious education in government schools. First shipment of export containers departed from Hobart on a feeder ship to link up with Australia-Europe container service. Several sightings of the Tasmanian tiger reported. First motel to be constructed on King Island. Promise of overseas finance enabled plans to be announced for the biggest central sawmilling project in Australia at Smithton combining the operations of several North-West Coast mills. Interstate shipping freight rates increased by 12.5 per cent. Europe-Australia shipping rates also increased by 12.5 per cent. Burnie became a free delivery area for petrol. Intrastate road transport rates increased by 10 per cent. Payroll robbery of \$9,100 from Hobart Fire Brigade. Rivers and Water Supply Commission to investigate feasibility of flood protection proposals for Longford. Mr R. R. Neville, Burnie building contractor, appointed new Tasmanian Agent-General in London. Middle income earners granted 10 per cent taxation concession in Federal Budget, 1970. Safety device, preventing a car from being started until seatbelts are fastened, invented by Tasmanian. Worst floods for 26 years in Mersey-Forth Valley destroyed houses, roads, bridges, railway lines; damage estimated at over \$3m. Budget speech televised from House of Assembly for first time. Driving licences increased from \$2 to \$5 (pensioners exempt). Moon rock sample displayed at Tasmanian Museum. Nine pounds of cannabis (worth \$8,000) seized from Indian freighter in Hobart. Salaries of State Parliamentarians increased by 20 per cent. Clarence won its first T.F.L. football premiership. Tasmania Week held in September. Legislation to create position of Ombudsman rejected by Legislative Council; Government to re-introduce bill in 1971. Computer used by Education Department to plan its new social sciences curriculum. Federal Conference of State Ministers on censorship recommended introduction of 'R' classification for films, restricting them to persons over 18 years. Two-thirds of Bellerive Primary School gutted by fire. Charges dismissed against Launceston supermarket chain for illegally selling artificially flavoured and coloured margarine. Arson attempt at Risdon Vale Primary School. Opening of Department of Agriculture's \$1m research laboratories at New Town. Postal charges increased. First double kidney transplant performed at Royal Hobart Hospital. Tasmanian Council of Churches became the first in Australia to admit Roman Catholic Church as full member. Heads of State Government Departments received pay increases of 7-9 per cent. State Premiers accepted Tasmanian formula for Commonwealth reimbursement of revenue in lieu of receipts duty. Tasmania to be first State to introduce teacher training course in speech and drama. Report to Government on Tasminex N.L. strongly criticised share transactions by persons associated with the company. Alcohol and Drug

Dependency Board reported 4,500 alcoholics in Tasmania. Melbourne's West Gate Bridge collapsed while under construction; 35 workmen killed. State's largest Housing Commission project planned for Rokeby. College of Advanced Education granted \$0.5m by the Commonwealth for capital works over next three years. Six Launceston independent schools to combine Higher School Certificate classes in 1971. Construction of oil-poppy processing plant commenced at Latrobe. Hobart's first armed bank robbery occurred at North Hobart. H.E.C. announced \$114m Pieman River Project and a second oil-fired thermal station for Bell Bay. Parliament again rejected proposal for TAB in Tasmania. New legislation introduced severe penalties for drug trafficking and possession. Hobart couple celebrated 71st wedding anniversary. Board of inquiry into Tasmanian fruit industry recommended a single marketing authority for export apples and pears. Kidney from Tasmanian donor flown to Melbourne for transplant. Trade Practices Tribunal ruled against price-fixing agreements between two Tasmanian carton manufacturers. N.S.W. journalist appointed Director-General of Tourism; head of Tasmania's new Tourism Development Authority. Federal Government allocated \$600,000 flood relief grant for Mersey-Forth Valley. Large meat export abattoir to be built at Somerset to supply the export market. Completion of the removal Garden Island from Tamar River shipping channel enables larger vessels to enter river. Federal Government to set up statutory wool marketing authority operating a flexible reserve price system for wool auctions. Launceston's Princess Theatre re-opened as live theatre; first performance given by the Australian Ballet Company.

Appendix C

LATER INFORMATION

CHAPTER 3

Senate Elections 21 November 1970

The composition of the new Senate is as follows: A.L.P. 26, Liberal Party 20, Country Party 6, Democratic Labor Party 5, Independent 3. The Liberal-Country Party coalition is in the minority in the Senate holding 26 of the 60 seats. In Tasmania the retiring Liberal Senators, J. E. Marriott and A. E. D. Lillico were returned as were the A.L.P. Senators J. O'Byrne and D. M. Devitt. Senator R. H. Lacey (A.L.P.) lost his seat to an Independent, Mr M. Townley.

CHAPTER 8

Hydro-Electric Commission—Pieman River Scheme

In a Report presented to Parliament on 21 October 1970, the Hydro-Electric Commission announced a power development in the Pieman River catchment of the West Coast. The total capital cost is estimated at \$114m; the total installed capacity at 420,000 kW; and an eventual average output of 1,770m kW hours per annum.

Location

The Pieman River flows from the confluence of the Murchison and Mackintosh Rivers, entering the sea below Corinna. The catchment area of 1,034 square miles is mostly rugged, mountainous Crown Land, experiencing annual rainfall between 90 inches and 140 inches. Only two per cent (24 square miles) of the catchment area will be inundated. No developed farmland, or known mineral deposits of commercial value and only very limited quantities of exploitable timber occur in the area.

An administrative base will be constructed near Zeehan, with additional accommodation centres near the main construction sites (Rosebery, Tullah and the Pieman dam). The peak work force will be 900 workers.

Schemes

Mackintosh: The scheme includes: (i) a dam over 300 feet high on the Murchison River; (ii) a 6,800 feet long tunnel from Lake Murchison to Lake Mackintosh; (iii) a dam 250 feet high on the Mackintosh River about two miles downstream from the Sophia River junction and the subsidiary Tullibardine dam (80 feet high) together creating the main storage of the entire development; and (iv) a 72,000 kW power station below the Mackintosh Dam through which the combined flows of the Mackintosh and Murchison Rivers will pass.

Rosebery: Includes: (i) A dam about 240 feet high, located on the Pieman River upstream from the Rosebery township, creating a lake extending up the Mackintosh River to the Mackintosh Power Station and up the Murchison

River to just downstream of the Murchison Dam; (ii) a power station immediately below the Rosebery Dam, installed capacity, 76,500 kW; (iii) the relocation of one and a half miles of the Murchison Highway including new bridges over the Murchison and Mackintosh Rivers; and (iv) the relocation of about two miles of the Emu Bay railway, including a new bridge over the Pieman River.

Pieman: Comprises: (i) a dam about 390 feet located on the Pieman River immediately upstream from its junction with Stringer Creek; (ii) a subsidiary dam 50 feet high; (iii) a 270,000 kW power station, located at the junction with Stringer Creek; and (iv) a main access road, 22.5 miles long, from Zeehan to the dam site, about six miles upstream from Corinna.

CHAPTER 10

National Wage Case 1970

Seven applications from the private and public sector constituted the 1970 National Wage Case. The unions representing blue collar workers claimed a \$9.00 increase in both the total and minimum wage and the restoration of quarterly cost of living adjustments. Unions representing white collar workers claimed a 16 per cent increase in the total and minimum wage.

Employer organisations offered a flat two per cent increase in both the total and minimum wage.

In its judgement handed down on 14 December 1970 the Commission granted a flat six per cent increase in total wages and increased the minimum wage by \$4.00 per week. The effect in Hobart was to make the prescribed minimum rate \$47.00 per week.

The Commission rejected the unions' claim for the restoration of quarterly cost of living adjustments.

APPENDIX D

INDEX OF SPECIAL ARTICLES

In this edition an index of articles specially prepared for the Year Book series has been included for the first time. The articles are indexed to broad subject areas rather than to detailed items.

Articles which appear in several editions have been indexed to the year, edition, number and page on which the main article was first published.

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